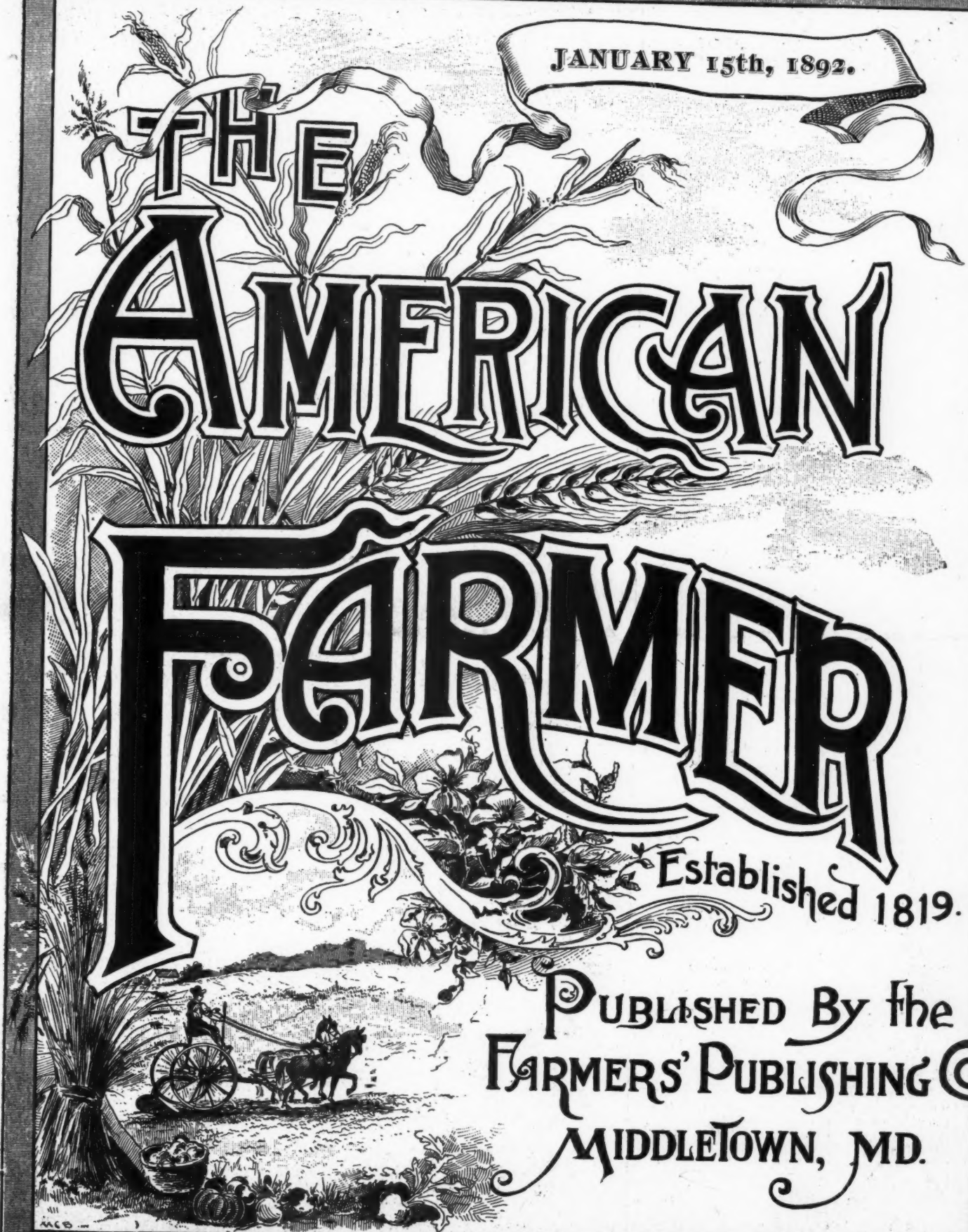


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JAN 15 1892
JANUARY 15th, 1892.

THE AMERICAN FARMER

Established 1819.

PUBLISHED By the
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MIDDLETOWN, MD.



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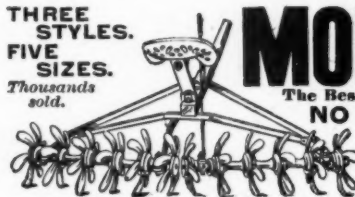
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THE AMERICAN FARMER.

DEVOTED TO AGRICULTURAL, HORTICULTURAL AND RURAL LIFE.

ESTABLISHED 1819.

MIDDLETOWN, MD., JANUARY 15, 1892.

ELEVENTH SERIES.
VOL. 1.—No. 1.

The American Farmer.

"O FORTUNATOS NIMIUM SUA SI BONA NORINT
AGRICOLAS." — Virg.

Published Semi-Monthly by the
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tiser.

EDITORIAL.

'92 TO '91.

Old '91, your'e with the dead!
Your deeds are now upon your head!
Farmers bless you, they have reason,
You gave great crops in due season;
You gave our land no war, no strife,
But you took off much noble life;
You entered homes of high estate,
You took some small, but many great.
Blame you? No, it was God's decree,
He claims his own 'whoe'er they be.
I'm '92, old year, good bye,
A twelve-month more, I, too, must die.

OLDEST AND BEST.

"Ah, happy swain! ah race beloved of
heaven!
If known thy bliss, how great the blessing
given."

History informs us that the
Chaldeans inhabited the native
country of agriculture and at-
tained to great perfection in this
valuable art. The Egyptians, less
assiduous, however, really re-
garded it as a special blessing from
the gods. Persians accepted it as
a great precept of their religion.
Other heathen nations also held it
up as the first and best of bless-

ings. These are the few of the
many striking instances of its an-
cient, exalted dignity. In the
darker ages which obscured the
human mind, agriculture de-
scended in the scale of importance
with the other arts, but as soon as
reason began to dawn, dispelling
the black clouds of ignorance, we
find our genius of agriculture
looming up as a sun and scattering
her rays of hope and plenty abroad,
for the benefit of the many. She
has flourished in all ages of human
civilization and only in the de-
based and barbarous mind, has her
great beneficence been obscured.

When sloth and ignorance
guided the plow, *agriculture*, *re-
proach* and *ignominy* became syn-
onyms and "Do as daddy did," was
the only principle of action, the
physical and moral necessity of
improvement failed to enter the
mind of the despised farmer, who
was regarded only as a fit compan-
ion for the beast that was made to
draw his plow. Ah! those were
dark days indeed, for the tiller,
and may they never return.

The farmer now, since action
and reason have made a common
cause, is on top, so to speak,—his
art is now founded in science,—he
is invited into the sanctums of
professors, and they feel to do him
honor.

We notice that in the early ages,
agriculture was the parent of
traffic, for riches then consisted
mostly in live stock and tillage,
which are yet essential to promote
trade of a general character among
all classes, but we think more par-
ticularly so to such nations as are
great in cattle, corn and fruits.

The labor of the farmer, in the
present age, employs the manufac-
turer and supports the whole com-
munity of man. It sets the mas-
sive engine of commerce in motion,
for who would undertake to spread
the sail without the aid of the
plow?

It is possible to exhaust our
mines of the precious metals, also
possible to lose the specie we have
coined, all embellishments of our
splendor could be dissipated,
strangers might even refuse to
trade with us, still the "Oldest and
Best" is with us and "for us and
who can be against us." The

fertility of the earth ever
offers abundance to an indus-
trious people. We see there-
fore some of the reasons that
prompted the ancients to so highly
esteem agriculture, and our duty
and interest call upon us to main-
tain its dignity by educating our
children of the plow as well as
those of the pen.

The chantings of Hesiod
and Virgil in praise of
agriculture should be sung to our
children and the many vices of our
populous cities clearly pointed out
to every young man who is able to
be a farmer, but who is pining for
for urban society.

The honest industrious farmer
lives in a manner which inclines
him to justice, sobriety, sincerity
and other virtues which dignify
human nature. Not so the city
man, be he merchant, doctor, law-
yer or private citizen, he is con-
tinually surrounded by an atmos-
phere, poisoned by the worst vices,
some perhaps that the plow-boy
will never know.

The intelligent farmer will be
found teaching his boys that agri-
culture is a pursuit of such worth
and honor that without the indus-
try of the farmer, riches would be
worse than a burden to the great
and honest labor would starve the
poor.

Let us teach our youth that
whenever the ancient Romans
were in extreme distress, they al-
ways sought the rural plow. Also
that when grand old Cincinnatus
sought the second time in his life,
to become a noble man, he retired
to the country and was happy in
his nobility.

AGRICULTURE.

Study is essential to the highest
success of agriculture, and farm-
ing ought to rank among the
learned professions as a field of
intellectual labor and enjoyment.

It is beautifully adapted to the
wants of man. The general laws
of vegetable growth are so simple
that they can be understood by
men in a low state of civilization,
when the wants are few; and they
are also so complicated and nicely
balanced in their higher relations
that they require all the study,

wisdom and skill of the highest civilized society, that the fruits of the earth may satisfy, in their quantity and quality, the demands of such a state of society.

We find, then, in the very beginning, plants adapted to man as an intellectual and physical being. By their unlimited power of improvement they are fitted to call out forever, his mental activity, and by this very power of improvement they are fitted to gratify his increasing desires, as he advances in civilization.

—o—

UNCLE SAM'S TWINS.

The Siamese twins, Chang and Eng, were not more closely nor firmly bound together than should be Agriculture and Manufactures. Their interests, in our country especially, are so intimately related, that if they go not hand in hand, cordially co-operating, no great measure of success can come to either. They are dependent upon each other and if they fail to make good use of their twin-ship, now in this age of thought and progress, "many and sharp will be their ills." Without doubt the farmer feeds all civilized mankind and feeds them lavishly, but the manufacturer protects the tiller against heat, cold and shame by giving him his raiment. He also gives him many labor-saving machines, without which, his cultivated acres would be of the pioneer number, far back in ages past, with little prospect or hope of adequate compensation.

These twin industries cannot be well separated, as proof, we notice how one crop failure paralyzes all other industries of the country, and the manufacturing industry most of all. Business failures increase and thousands of bread-winners are turned from the various shops and factories, without money enough, in many cases, to buy the common necessities of life.

We can readily see that every industry, business and profession is vitally interested in the farmer's success.

Then let us lend our aid without stint and give encouragement to him who gives us our bread. But the farmer looks to the town and city for markets for his crops. The urban population buys his raw material and makes it ready for use. No antagonism can or will exist between these two great industries, Agriculture and Manufactures, if intelligence be allowed to hold the reins.

Their interests are mutual, and if they conclude to march under a united banner, well considering the welfare of each other, the industrial world will proclaim them twins indeed.

—o—

OUR ENEMY.

In our day we are confronted with the word "Monopoly" in nearly every avocation or walk of life. The big speculator gets the "corner" on the largest scale and comes out with the biggest pile. He gets the most curses, for all the small operators are against him, but like the huge mastiff, he only snarls and the little curs scamper. It does seem to us that this gambling could be at least reduced to a minimum, if not altogether dissipated, if the honest yeomanry of this country would so elect. We claim that we are working to that end by our associations of different kinds. We meet and organize, discuss and plan, we plead and petition, and yet we have very unsatisfactory results. Let us see what is wrong. Let us ask ourselves if we have divested our bosoms of selfishness, if we have been charitable enough to stick to our first profession, that of working to secure the greatest good to the greatest number. Or have we not rather fallen in with Puritanical notions. "We and ourselves only."

That move in the North West in regard to wheat, a short time ago does not give to the candid mind the idea, that Charity was the chief virtue which shone at that time, nay self was the guiding star on that occasion and reform was stayed.

But we see a light beyond and great reforms are not born in a day. The various organizations in the different sections of the country have a common interest, then why so many methods? we ask. We must come together, consult each other, determine among ourselves what is best to do and how to do it. We must avoid extremes, be liberal and honest with each other, must diligently search for the "Golden Mean," and if we do this with full purpose of heart, we will find ourselves standing upon a common platform broad and liberal enough to meet the approbation of the honest tiller of every section of this broad and beautiful land of ours.

But we must watch ourselves, so that our selfishness does not lead us away from duty. In our demands we must ask with the view that all sorts and classes need con-

sideration as well. We must employ no underhanded or evasive methods, but we must fearlessly fall into line and battle against grasping monopolies of whatever kind as though the enemy could send but harmless pellets into our ranks. Fair, honest trade of all kinds must be respected and fostered, but monopolies of the blood-sucking type, should be put down, and if the farmers of the whole country do their part or in other words if they are prudent and make use of the power that they unitedly possess, the victory is won, and the dawn of the good day is upon us.

—o—

NOTES OF INTEREST.

If you take a small quantity of earth from different parts of your field, mix well together and weigh the mixture; put them in an oven heated as for bread; after it is thoroughly dried, weigh again; the loss in weight will show the absorbent power of the earth. Now if the loss is 1 or thereabouts, this power is great and shows that your field is rich in animal or vegetable matter. But if only about 1-20th is lost by the above process, your soil is deficient in animal or vegetable matter and is consequently poor. Try it for proof.

It has been truly said that in a crowd of ten men, you will find nine who have mistaken their calling. Heaven born orators are carrying hods, athletes are preaching the gospel, brilliant writers are shoeing horses. There are lawyers who ought to be driving mules, and mule drivers who ought to be practicing law, many surgeons ought to be sawing wood, and wood choppers we have who ought to be surgeons. There are men in prison who ought to be in high positions, and many high officials who ought to be in prison.

If farmers would prepare sinks or barrels and save all the soap-suds that is usually thrown away, and apply it to the early truck patches, we know they could have more money. Try it one season. The result will astonish you. Leave it stand a few days before applying.

Sheep should not be allowed in cherry or peach orchards where they can get the roots, sprouts or leaves. These leaves contain sufficient prussic acid to kill them, if they eat such stuff, which they will be almost sure to do.

Agriculture.

For the American Farmer.

CLOVER.

By X., MARYLAND.

It is one thing to grow heavy crops of clover, but a very much harder one to cure and preserve it, so that it may become first class hay. Many persons suppose that its value depends entirely on the amount of rain which may fall on it while undergoing the curing process in the fields, but recent experiments prove that temperature has a most important influence also. In the November number of the *Experiment Station Record*, where an experiment with clover exposed 18 days on which rain fell one 9th of an inch, in 1891, in cocks and swaths, gave the following result:

	In Cocks.	In Swaths.
Loss of total dry matter	18.3	29.4
Loss of crude fat.....	31.0	41.0
Loss of crude protein..	29.0	24.8
Loss of digestible "	19.8	38.8
Loss of non-albumoid protein (amides).....	9.6	12.2

These losses were sustained when the thermometer marked 68° F. and when compared with the seasons 1883 and 1884, when it was 62° and 60° respectively, showed that the number of rainy days and of rainfall did not account for the loss.

Another point seems to be made. Put the grass in as large parcels as possible. A successful hay raiser here packs his clover in a house the same day he cuts it as tight as possible and rarely fails to have good hay.

COTTONSEED COMPOSTS.

Our Southern friends have the advantage of us not only so far as climatic conditions are concerned, but also in the way of access to plant foods, writes T. Greiner in the *Practical Farmer*. Frequently they can get cottonseed hull ashes, castor pomace, tobacco refuse, phosphates, wood ashes and similar manurial substances at almost nominal prices. Yet only too often these splendid opportunities are not appreciated as they deserve.

Cottonseed is perhaps the cheapest source of nitrogen and potash available to the farmers in great sections of the South. F. F. Rockwell, of Leonard, Texas, is composting cottonseed, ashes and barnyard manure, equal parts of each,

with the intention of using the resulting mixture as a fertilizer for cotton and corn. What he desires to know is the best way of applying it to the crops named on good, strong black soil.

I am not informed about the actual composition of the ashes which our Southern friend uses; but if it is a fair average of unleached wood ashes, the compost will analyze about as follows, viz: 2.33 per cent. nitrogen, 1.5 per cent. phosphoric acid, and 2.5 per cent. potash. We may well suppose that his soil, for the crops named, is in need of phosphoric acid as much as of the other two, if not more; consequently the mixture is deficient in this element, and to make it more evenly balanced, we would do well to add 500 pounds of dissolved bone, or other superphosphate, thus making a mixture that would analyze about 2 to 2½ per cent. nitrogen, 5 per cent. phosphoric acid, and a little over 2 per cent. potash.

There is still another question that comes up for consideration. Will the wood ashes not drive some of the nitrogen (in ammonia) off? Perhaps it would be safer to keep the ashes away from the mixture, and apply by themselves, reserving them for old fields or sandy pine lands, for orchards, wheat fields, etc.

Professor Dabney, of the South Carolina experiment station, some time ago gave the following formula for a cotton and corn manure, viz: 800 pounds stable manure, 750 pounds cottonseed and 450 pounds dissolved bone. This gives a ton of fertilizer that analyses about 3 per cent. nitrogen, 5 per cent. phosphoric acid, and 1 per cent. potash. To make the mixture, spread upon a covered floor a few inches of barn-yard manure, upon it two inches of bone, and next four inches of cottonseed. Moisten the whole mass well with water, or better with urine; next put another layer of barn-yard manure, then bone, then cottonseed, and continue until all the material is used. Now cover the whole with dry earth, and leave to ferment. Before using the compost should be forked or shoveled over, and thoroughly mixed. This fertilizer is not well supplied with potash. While all right for strong soil, which is not deficient in potash, it should have that element re-enforced when to be used on well-worn sandy lands that supposedly have very little potash. Here ashes may be applied, or a few hundred pounds of muriate of

potash may be added to the compost heap.

From 300 to 500 pounds of the mixture, according to strength of soil, will be a good dressing for an acre of cotton. Put part in the furrow, reserving about 150 pounds to be put with the seed. For corn apply about a pint of the mixture to the hill. If the land is poor, apply also a good dressing broadcast.

Another good formula given by the same authority (Professor Dabney) is as follows, viz: 600 pounds of dry muck or peat, 600 pounds of cottonseed, 600 pounds of acid phosphate and 100 pounds each of muriate of potash and sulphate of ammonia. Three hundred pounds of this will do for an acre of wheat, rye or oats, to be harrowed in with the grain. This formula makes a rich, well-balanced fertilizer, analyzing approximately 4 per cent. nitrogen, 6 per cent. phosphoric acid and 3 per cent. of potash.

INSTRUCTIVE FACTS ABOUT CORN.

There are differences between yellow and white corn, independent of the color. The former contains more starch and will make more whiskey, and is preferred for animal food where fattening is the object in view. The latter has more gluten and oil, and is almost universally preferred for bread. As food for horses, where nerve and bone nutriment are more desired than fat, white corn has the preference. White corn is considered as coming nearer to oats than yellow corn, and is therefore better food for working animals. So far as the results of analysis are known white corn has about 1 per cent. more of the muscle-forming elements than yellow corn, but the relative value of the two varieties in this respect has not been very accurately determined.

The corn plant is one of the most widely distributed, but every section has a type best suited to its soil and latitude; therefore the interchange of seed northern and southern grown is not a safe practice if the distance to the north or south is a long one. From east to west the transfers may be longer. Corn planted in the north from a southern seed grown in longer seasons is almost certain to be caught by frost. The plant, however, has the faculty of becoming acclimated and under a few years of cultivation of adapting its growth and period of ripening to the seasons of the sections to which it is grown.

MARYLAND'S CLIMATE.

BY X., MARYLAND.

In various sections of the country investigations are in progress as to the soils and climates of them. In this State for years little attention has been paid to the climate of the State outside of a few points around Baltimore, one in Harford and one in Allegany. These, until very recently, had no access to the general public save in the "Monthly Weather Review" which reached the observers alone. Three and a half years ago the Signal Service had not a single observer from Harford down to the Eastern Shore of Virginia. As a result those of the Western Shore of the State know very little about the climate of the Eastern Shore. With a view of presenting the readers of THE FARMER with an idea of what it is in Southeastern Maryland, the following table exhibiting that of the Northeastern section of Wicomico for 1891, is respectfully submitted:

MONTH.	Mean pressure corrected for temperature only.	TEMPERATURE.			Total precipitation (rain and melted snow), inches.	Total snowfall, inches.	WIND.		Average Humidity.	Highest temperature of month.	Lowest temperature of month.	Range.
		Mean.	Max.	Min.			Prevailing direction.	Maximum velocity of force.				
1891.												
January.....		38.2°	46.5°	30.6°	5.11	traces	N. W.	2	76.9 per ct.	68°	23.1°	39.9°
February.....		43.2	50.6	37.4	6.59	0	S. W.	3	83.2	74	14	60
March.....		39.4	46.4	32	7.54	4 inches	N. W.	3	84.1	65	17.5	47.5
April.....		54.4	64.3	44.7	1.76	0	S. E.	3	68.9	81	28	53
May.....		59.4	88.3	51.1	4.50	1 trace	S. W.	2	74.9	86	31	55
June.....		69.9	79.2	59.6	1.85		S. W.	3	76.7	91	51	40
July.....		70.8	79.6	61.7	12.12		S. E.	3	81.2	87	55	32
August.....		81.3	67.2	55	6.17		S. W.	2	83	90	55	35
September.....		69.3	79.2	60.5	.53		S. W.	2	84.6	88	49	39
October.....		56.8	63	46.6	4.83		N. W.	2	76.5	83.5	39	44.5
November.....		44.0	53.1	34.7	2.27	3½	N. W.	2	77.1	69	13	56
December.....		43.6	55.0	33.3	2.99	1 trace	N. W.	2	76.7	68	15	53
Sums.....												
Averages.....		55.7°	64.3°	45.6°	4.68 inches		N. W.	2.3	78.6 per ct.	78.7°	32.5°	46.2°

BROOM CORN.

Broom-corn tops are imported for manufacturing into brooms, whisks, &c. Every bit of the broom corn needed could easily be raised in this country. Broom corn calls for more labor than Indian corn. The land should be plowed and thoroughly harrowed and marked off as for a crop of ordinary corn. If the land is light and rich and previous tillage has gotten rid of the weeds, the broom corn seed may be sown in drills. Only good, heavy seed should be used, such as will sink in water. Alluvial lands are best for raising broom corn, though any soil that will grow a good crop of Indian corn will also produce a paying crop of broom corn. Any extra attention or manuring gives an increased growth. Weeds should never be allowed a chance to get a start, for broom corn must have clean culture. Besides the cultivator, shovel plows and other implements of horse power, the hand hoe is used in sections when broom corn is made a specialty, notably in the Shaker settlements in New York State. As soon as the corn is about a foot high it is thinned so as to leave four, six or eight stalks in a hill, or if it is planted in drills, thinned according to the strength of the soil. In both cases judgment must be used as to the number of stalks to be left. Plant after all danger of frost is over. Harvest before the seed becomes fully mature and yet not too green. If the right time is selected it results in securing heads that are bright and medium green in color after

being cured, besides making a more wiry and consequently more durable material. A very good time to secure the heads at their best is just after the blossoms commence to fall. The usual method is to bend the stalks two or three feet from the top so the heads can hang down for two or three days. This will allow them a little chance to dry and keeps the brush in nice shape when it is harvested. Cut about a foot below the brush, lay in piles and take to the scraper. There are various kinds of machines used to scrape the seed from the brush without injury. There are power machines that will remove the seed from three acres of brush in a single day or less. The stalks have no great value for stock, and the best use, probably, would be to run them through a cutter, cut fine and use as absorbent material in the barn yards. The practice of the Shakers is to break them down with a heavy drag in the spring and carefully plow them under, and then go over the ground with a heavy roller, which process completes the preparation for planting again. Broom corn was planted by the United Society of Shakers in Watervliet, N. Y., as early as 1791.—*Balto. Sun.*

—o—
DEPTH OF UNDERDRAINS.

The almost universal mistake of beginners in underdraining is to make drains too shallow. It is harder digging after the spade goes below the usual depth of the plow. This is also usually the depth to which vegetable matter in any amount extends and to

which Winter frost penetrates. If the land is heavy it may well seem that surface water will not sink down to reach the tile if buried to a great depth. This is a mistake. Impervious as the sub-soil seems, it is filled with cavities, where possibly ancient tree roots have decayed, and which carry the water down to the still larger conduits that are the sources of springs. We have often come to such when digging deep drains, while at a depth of two or 2½ feet little water will run into a tile save that which soaks directly into it from the surface.

Deep draining has thus the effect of reaching a much wider surface and making fewer drains necessary. As surplus water is removed to a lower depth, frost goes deeper, expanding the soil and allowing roots of plants to go lower down in search of food. This greatly increases the capacity of the soil for holding water without being saturated with it, as it may soon become where water is stagnant. It may seem like a contradiction in terms to argue that draining soil helps it to remain moist to a greater depth, and for a longer time. Yet this is doubtless the fact. Let a bog that is protected from deep freezing by water in Winter become dry in Summer, and its compact subsoil will not be then nearly as moist as is the soil over a drain that has been in operation several years. The soil has deepened, not merely by expansion of repeated freezing and thawing, but also by being penetrated with roots of crops that have penetrated it for the moisture and

have there decayed. It is for this reason that drains instead of deteriorating grow more effective as years go by. This is especially true of deep drains. The surplus water comes to them from a larger surface area. But it comes so gradually that the deeper drain is less liable to be flooded with water or choked by sediment than one that has been made only two feet or so below the surface. The deep drain runs much later in the season, but without being flooded at any time.

In our first experience with underdraining it was not thought important to put the stone or tile deeply. But we soon learned that the shallow drains were unreliable after a few years. In the loose soil above the tile frost penetrates in Winter down to the underground conduit. It did not break the tile, but by freezing the earth above the joints it made a finely pulverized loam that was washed into the tiles or stone water-ways when Spring rains came. In two or three years we learned that no drain was wholly reliable that was not fully three feet deep. Wherever the outlet allowed it we aimed to make them that depth. A few we dug four feet deep, and thus tapped many springs that the three-foot depth would not reach. Where land is to be planted to orchard four-foot drains are always best. Possibly these will be reached by tree roots in time, but it will be after the soil is so filled with tree roots that the drains if open would carry little away. The same is true of other crops, especially if clover is frequently sown. The soil becomes so filled with clover roots that in our climate it will hold most seasons of the year all the water that falls on it. Yet wet land, unless drained, cannot be made to grow clover to produce such a result.—*American Cultivator.*

SELECTING A FARM.

The advance in the prices of all farm products has already had its effect upon the value of land. Many persons with but little experience and none at all in making money out of land, will be induced to buy and go into farming the coming year. Farming is a pleasant and profitable business to those that know it, but a very expensive one to those who do not understand it.

In buying a farm, if possible buy for cash, and have some money over to purchase stock, tools, &c., and to pay current expenses for a

year or more. Always remember one can spend a lot of money in building and repairs upon a farm in a short time, and with very little money in return for the investment.

In buying a home, try first of all to get into a healthy neighborhood, with good water, the house situated upon a hill, rather than in a valley. Select a thrifty settlement and one that is temperate, with good churches and schools. A small number of acres upon a solid stone road, near a good market, is worth many times more than twice the quantity of land upon a dirt road that is almost impassable during the winter and spring.

Upon a stone road, two horses will jog along comfortably with the same load that will require four upon a bad one. A limestone farm is the most fertile, as clover grows naturally upon it, and will keep up its fertility along with an occasional dressing of lime. A clay loam is next in value, and if well manured and cultivated when the soil crumbles, will stand drouth much better and produce enormous crops. A sandy or isinglass soil is valuable for trucking, being easy to work, requiring less labor for man or horse, and the crops maturing quickly. Such a soil, however, is hard to keep in condition, and requires a large annual outlay for manures.

Avoid a low, wet soil, unless you are in the dairy business, and then you don't want too much of it. Thin scrub-oak land, abounding in "nigger head" stones, is to be avoided if the money for the family support is to come from the soil.

In selecting a farm, it is the part of wisdom to get the advice of some good farmer of your acquaintance as to its agricultural worth; and always remember that it is much easier to buy than it is to sell.

CARING FOR MANURE.

Manure may be spoiled by either of two extremes—by being kept too wet or too dry. By the former it will burn, or fire fang, thus losing a large portion of its nitrogen; and by being kept too wet it will leach out, thus losing all elements of plant food. It is best (when not applied directly to the land) to keep it just moist enough to keep down the heat. One or two buckets of water thrown upon the pile each morning will accomplish this.

THE drains are good manure for corn.

For the American Farmer.

THERMOMETER TEACHINGS.

BY X, MD.

It is a hopeful sign that not only is the thermometer noticed but studied in numberless points that had hitherto escaped notice, thus it takes the place of the barometer somewhat in its weather indications even the dry bulb alone.

Prof. Russel of the Signal Service office in a discussion of the cold wave problem and how to fortell them brings this value out clearly, and in doing so emphasizes the absolute necessity of each and every man keeping a record of its readings for no two places, however close together, have precisely the same.

Outside of a very wet or dry crop season the advent of frost is most to be dreaded for in numberless instances, its damages to the growing crops are irreparable unless timely precautions are taken to ward them off. The Signal Service may be depended on in a general way to give these, but daily papers, owing to distance from post office, are not available, nor are whistle signals, a far better way of extending their warnings than flags, as yet in general use as from the multitude of milk manufactories of every kind they should be.

Prof. Russell has shown that 95 per cent. of the cold waves that occurred between 1880 and 1889, the temperature of the preceding day at 7 a. m. was near the greatest that has been known for that place. Thus the cold wave of 1890, March 16, was preceded on the 12th by a 7 a. m. temperature of 54.8°, followed by one of 47.8° on the 14th, 36.4° on 15th, and 24° on the 16th. Average at 7 a. m. for 24 years of 42.4°. As will be seen by the above the lowest temperature was not reached until 4 days after the abnormally high. An examination shows that these lows rarely occur here until the second day after the abnormally high ones, and that they seldom or never occur when the average A. M. is above 50°.

The change of temperature to be considered a cold wave ought to exceed the daily change of temperature.

Crops are said to be fruitful, or the reverse, as the range of temperature is greater or less. In this State the greatest range is in May and the least in July and August, taking 1889 as the year for data; hence it must be considered the critical one, especially for frosts that usually fall in the first half of the month.

FORETHOUGHT VS. INCONVENIENCE.

The wonderful amount of inconvenience some farmers put up with is, to a man with a practical turn of mind, a source of astonishment. There are on many farms labors daily performed which, with a little thought, could be much lessened. There is with the average farmer a disposition to take things as they find them and always keep them so. Farmers do not appear to even stop to contemplate whether they could improve on a method they are following or not. It is this class of farmers, though, that are so often heard to declare farming does not pay. A farmer kept a number of milch cows in winter. His barn was made in such a manner that the hay and fodder which was kept in the mow had to be pitched first down on the barn floor, then down the stairs to the passage-way in front of the cattle stalls, and then again pitched into the racks. Besides the amount of labor such an unhandy method involved it occupied considerable time. It was hinted that the barn was not as handy as it might be. "No," answered this patient farmer with sixteen years' experience, "I s'pose a handier barn might be made than this one." "Why don't you cut an opening in the floor of the mow and one to correspond to it on the barn floor, box in a shute of planed boards, and then you could with one handling place the hay and fodder in the cow stable, and also save at least twenty minutes time each day." "Never thought of that, but I'll do it before the hay goes in the mow this summer." And he did. But before he did so he had lost at least twenty minutes every day for five months in each year, for sixteen years, to say nothing of the extra labor the little improvement would have also saved him. Then there are farmers who have a natural genius for making everything around their farms and buildings noticeably handy. Such are thinking farmers. They read, and have a pride in keeping to the front. They have not settled down with the belief that they already know all there is worth knowing about farming. Such men realize that conveniences on farms are great economizers. A writer in the *Tribune* shows that in erecting a building it should be made even a little larger than needed. The idea is a thoroughly practical one, and could be carried out generally in the constructions of farm out-

buildings. The writer says, under the significant head of "Corncrib and Sarcasm."

"This fall I built a corn crib, or granary, which is architecturally attractive. I did the work myself, furnishing all the material except outside covering, so the cash required was little, and I took the time and pains to make it neat and tasteful. It stands on two-foot lengths of sewer pipe, is 12 feet long and 9 feet wide at the sills and 10.6 at the plates, with half-pitch roof. My boy said a neighbor's boy had asked him if I was 'going to have enough corn to fill it.' By that I knew that his father had been comparing my 800-bushel crib with my 160-bushel cornfield. But the corn was only a part of the stuff to be stored. The building is divided across in two equal rooms, one sided tight, the other slatted on the sides only. The inclosed portion has a second floor 6½ feet above the other, and this loft I filled at once with berry crates, boxes, picking stands and market-baskets.

"It is quite necessary to keep these for nine months of the year where rats and mice cannot get at them, as they gnaw holes and fill them with nests of feathers and corn silk. During the summer, when they are in use, I can use the loft for drying seeds, onions, etc. The lower floor will be devoted to storage of berries and other fruit over nights and Sundays, and pears and apples in the fall. As I had no granary, it was necessary heretofore to use rooms in the house for fruit storage, much to the discomfort of the family as well as making a good deal of extra work. The corn crib portion will be partly used for storing barrels of feed and odds and ends of grain. So you see I have no waste room, and the neighborly sarcasm would not sting even if I were thin-skinned.

"Another neighbor sets a wonderful example of precision and neatness in all his work. One of his rotation crops is eight acres of potatoes. This year, owing to drought and blight, he harvested only 1,100 bushels, and nearly 25 per cent. of these were too small for market. I watched the crop with great interest all summer, and was really sorry when it proved a partial failure. The long, straight, thrifty, uniform rows, without a single weed, were a beautiful sight, and deserved a better finish, but I have talked with two or three farmers who seemed somewhat pleased that this methodical, particular man should fail to raise any

better potatoes than they did. The same spirit of jealousy crops out at farmers' institutes and in criticism of agricultural writing, and is really a bar to the progress of many tillers of the soil."—*Balto. Sun*.

SEED FARMS.

The production of seeds as an industry has been for the first time made a subject of census investigation. This investigation included only such farms as were devoted to seed growing as a business, and did not consider the large amount of field and garden seeds grown as side crops on thousands of farms, which would greatly swell the aggregate yield of seeds, but would not fairly estimate seed growing as a special industry. Seed growing has been carried on as a business in this country for more than a century, but only within the past thirty years has it assumed large proportions. More than one-half the total number of establishments reported were started between 1870 and 1890. There were in the United States in the census year 596 farms, with a total of 169,851 acres, devoted exclusively to seed growing, of which 96,567½ acres were reported as producing seeds. Of these, 12,905 acres were devoted to beans, 1,268 to cabbage, 919 to beets, 10,219 to cucumbers, 71 to celery, 15,004 to sweet corn, 16,322 to field corn, 4,663 to squashes, 7,971 to peas, 5,149 to muskmelons, 662 to radishes and 4,356 to tomatoes. The 596 seed farms reported represent a total value of farms, implements and buildings of \$18,325,935.86, and employed in the census year 13,500 men and 1,541 women; 258 of these farms are in the North Atlantic division, with an average of 185 acres per farm. In the North Central division there are 157 seed farms, with an average of 555 acres per farm. The seed farms in Iowa and Nebraska average 695 acres, several being nearly 3,000 acres in extent.—*Census Bulletin*.

In some experiments in feeding the prize steers it was clearly proven that corn is not the cheapest food for producing beef, but that the best results were obtained only when a variety of grain was allowed, with plenty of hay and good pasture.

THERE is profit to every corn raiser in a special seed patch.

Horticulture.

FOR THE AMERICAN FARMER.

FROM NORTH CAROLINA.

W. F. MASSEY, RALEIGH.

Well, "X," I give you up; I have tried to teach you something about pines, but that last medley of yours on pines beats me—you are incorrigible, but I hope the readers of THE FARMER will not hold me responsible for the last jumble, which I shall not attempt to unravel. There is more "pine top" than botany in it.

I know my scrawl is not easy to decipher, but the printer made a terrible mess of my letter on apples in North Carolina in your last; "the freedom from draughts in these mountain caves" was intended to be "droughts" and "coves." What was that your printer translated "The deep milkin soil." I cannot imagine. Perhaps it was "mellow."

"Pine fallings, pine shutters or needles;" I'll give you another name, "X," they call them pine "straw" here in the old North State. "A rose by any other name will smell as sweet," so no matter what you call them, the farmers of Wicomico can make more money raking up pine leaves out of their wood lands and putting them on the land to grow sweet potatoes, than they can by any amount of speculation on rainfall and temperature. And the leaves of the short-leaved and medium species found there are better than the long-leaved forms of the South. Wicomico can grow sweet potatoes better than she can wheat, and there is no reason why the crop should not be more extensively grown than it is there, and nothing will go further or cost less for this purpose than the rakings of a pine forest.

I wish I could persuade the farmers of the sandy section of the Eastern Shore counties to fully appreciate what our cow peas could do for their lands. As a preparation for a crop of early Irish potatoes for Northern shipment I know of nothing better. A crop of cow peas allowed to grow during summer, die upon the land in autumn, and plowed under as a preparation for the potato crop will give, with a moderate amount of fertilizers direct, better results than double the amount of fertilizers without the peas. As a preparation for corn, let the peas

die down, but in August sow all over them fifteen pounds of crimson clover per acre, and in spring plow the clover under in bloom and plant corn. We have here a piece of land on which corn has been grown every year for three years, and each crop has been heavier than the preceding one, simply by sowing this winter growing clover on the land after the corn is cut and plowing it under in spring. Four years ago it would hardly sprout peas. The past summer the corn would have made 40 bushels per acre had it not been cut for ensilage. Don't imagine that I offer this as an example of good farming. It is purely experimental work, but it illustrates the value of green manuring very forcibly. I am interested in Wicomico because my friend "X" lives there and "X" and I were old schoolmates there. I studied botany and "X" did not. "X" studied rainfall and temperature, and I took them as they came and made the best I could of it, seeing that I have no hand in the making of them, and don't now take any stock in shooting rain out of the sky. But Col. Dryasdust (or whatever his name), should succeed in proving it possible to bombard rain out of the sky, "X" can perhaps arrange the rainfall in Wicomico so as to make it grow wheat as well as Cecil, or so change the rainfall in Cecil as to bring its wheat production down to the average of Wicomico. The Bible has something to say, "X," about the man who observes the wind and the rain instead of working diligently at his crops.

Well, we are going to talk hereafter in the FARMER to our Eastern Shore friends at longer range, and I hope that the move to the fertile country about Middletown will enrich its columns with matters of even greater interest and value than ever. I must continue to chat in its columns if for no other purpose than to teach botany to "X," dull student as he is, and I hope his next examination paper will be better than his last. I trust that the old FARMER will take on a new lease of life and will soon be able to come out as a weekly paper. I hope we shall not miss any of the old familiar names in its pages, but that we may make it a vehicle of thought worked out in practical experience, a real Farmers' Club.

THOUSANDS of trees are ruined by propping the limbs to prevent their breaking down.

FLOWERS.

Many natural objects around us are perhaps properly regarded as the minor creations of the All-wise Ruler.

Of these none seem, to the refined mind, to point out so exactly the effusions of God's love of beauty, grace and joy as flowers: minor they are, only in the sense that they contribute but a small part to our absolute necessities. As God is God, we know that the earth could bring forth its abundance of grains, grasses and fruits clothed in less gorgeous apparel, but "God works in mysterious ways His wonders to perform," and in His wisdom gives us these silent but beautiful companions to gladden our hearts, to illumine our eyes and to keep us continually inspired with his boundless benevolence.

Ancient Greece, filled with the most learned sages, historians, musicians and statesmen, was a garden of flowers, and as the souls of her people were filled with the spirit of grace and beauty, they scattered these silent choristers of beauty,—companions of song, in their temples, wove them in garlands, crowned their conquerors with them and even offered them on altars to their deities.

Lovely woman is their guardian—they are secure for she ever loves the beautiful, the pure, the true. But oh! modern man, if you fail of pureness of heart, you will also fail to discern God in the flowers. —Ed.

PROTECTING TREES FROM RABBITS.

The most perfect protection will be a mechanical one that will prevent the animals from reaching the bark so they can gnaw it. This may be effected by the use of wire netting or by wrapping the stems with cloths or heavy paper to a height that cannot be reached by the rabbits. These, however, are among the most expensive and troublesome to apply. If wire is used the rolls should be of one inch mesh and at least two feet wide; then cut them crosswise into length that will encircle the trees and fasten by the loose ends where the wire meets. A very good preventive is a wash made of whale oil soap and lime and put on with a brush. Soft soap and lime made into a wash, with one part of sulphur to four parts of lime and diluted to the consistency of ordinary whitewash, is used by some with good effect. Where the soft soap is not to be had hard soap may be dissolved and used in its

stead. The trouble with applications of this kind is that they may lose their efficacy by being washed off by rains, and thus require several renewals in the course of the year. A simple and easily applied remedy consists in stirring a tablespoonful of assafoetida into a pailful of liquid clay and applying it with a brush as high as the rabbits can reach. It is said this will keep them away as long as odor remains.

AN APPLE ORCHARD TWENTY MILES LONG.

In the wild district of Hawaii, between Hana and Haiku, during July and August the most beautiful and largest apple orchards in the world can be seen. The Wilderness of Koolan, as the district is called, contains a forest of native wild apple trees, countless in number, stretching from the sea far up the mountain sides. The trees vary from forty to fifty feet in height, and in the harvest season, from July to September, are loaded down with fruit, some white, but mostly red.

A person standing in the midst of this orchard can look around him for miles up the mountain and toward the road, and the only thing in view will be one vast grove of apple trees literally red with ripe and ripening fruit, the branches of the trees bending to the ground with the bounteous harvest. The crop of this extensive apple orchard which nature planted in the solitary waste would fill a fleet of ten steamers.

The orchard stretches over a country from five to ten miles wide by twenty miles long, and many of the larger trees bear at least fifty barrels apiece. The fruit is delicious for table use, and will appease both thirst and hunger, but as yet no one will take the trouble to make any commercial use of the apples. When ripe they will not keep more than a week, but they make excellent jelly and jam, and simply for the lack of a little American enterprise millions of apples are permitted annually to fall to the ground and rot.—*Chicago Tribune*.

ASHES FOR PEACH BORERS.

The practice is frequently recommended to place heaps of ashes about the stems of peach trees to repel or to kill the grub or borer. Several inches of earth are to be scraped away so as to reach the upper roots. Strong objections are

made to the practice, on the ground that it will be sure to kill the tree. Much of this result, however, will depend on circumstances. An old tree, with thick, scaly bark, will not be so readily acted on by the caustic potash as young trees with green, tender bark. The gross mistake is often made of piling the ashes in a heap closely about the trunk of the tree, instead of spreading it thinly broadcast as far away as the height of the tree. Much also depends on the kind and condition of the ashes. It may be fresh, sharp and cutting; or it may be old and effete. It should also be borne in mind that peach trees will not bear so much as most other trees. We have seen fine bearing peach trees quickly killed by pouring refuse salt water around them. Those who are familiar with the practice of spraying are aware that peach trees will not bear the strong arsenites that are freely given to other trees. There is no question that in some localities both salt and ashes would be useful if sown thinly around peach and some other trees, in cautious quantities; but trial would be required to some extent, to ascertain the right quantity and to find out what soils would be benefited.

WASH THE TREE ROOTS.

A prominent fruit grower recently said that he made it a practice to wash the roots of trees before setting them. Sometimes the ground in the nursery is muddy and sticks to or among the roots, and if set out in this condition it will get hard and bake almost like a brick when the weather becomes dry. This will always kill the tree. Another reason is that we sometimes find root lice, a blueish-looking molt at first sight, but on closer observation they will be found to look like hen lice. When they have been on long, the roots become knotty and full of little fibres grown tight together like a sponge. This kind of a tree is not so good and should not be planted. I put in half a barrel of water, which we set in some convenient place, about half a box of concentrated lye and two ounces of crude carbolic acid. In this we dip each tree until washed clean. I have not yet seen any injurious results from this treatment, and the trees treated this way have always made a splendid growth.—*Homestead*.

Wood plants are shrubs when they are less than ten or twelve feet high; trees if they grow above this.

HEADING-IN TREES.

It is a good plan to buy young trees now, and haul them in to be ready to plant in early spring. There is not one man in one hundred who knows how to do this, only because they do not think before performing a job. Dig a trench lying east and west, make the north side of the trench perpendicular, and the south side on a slant about twenty degrees from a level. The trench must be deep enough at the north side to bury the roots six inches deep without cramping them. Now lay the trees in close together, tops to the south, and fill in well with fine earth; tramp well, and if the trees are of a tender sort, cover the tops with earth also. Bank up well, and in spring they will be all right if the location of the trench is on a dry knoll.

STARTLING.

Recent experiments in England show that it is possible to "inoculate" the roots of annual plants with microbes, and thus induce the growth of root tubercles through which they can draw nitrogen from the air without the use of nitrogenous fertilizers.

A FRENCH gardener tells that he had two fields of cabbage that were covered with caterpillars. He sprinkled over them some mineral superphosphites and a few days afterwards all the caterpillars were found to be destroyed upon the leaves which they were eating. He has not had the same result with the means ordinarily used.

EVERGREEN seedling can be secured at a very low cost, and if properly cared for will make a thrifty growth and make the best trees for a wind break.

SOME recommend planting apple trees in masses as a wind break where the land is liable to be swept by hard winds.

NURSERYMEN are generally very willing to sell three or four-year-old trees at the same prices as for two-year-old.

WHENEVER a large wound is made in pruning a tree, it should be well covered with grafting wax to prevent future injury.

Use well rotted manures around the grape vines; fresh, course manure often induces too strong a growth of wood.

Live Stock.

EFFECT OF WATER UPON HORSES.

A horse can live twenty-five days without solid food, merely drinking water; seventeen days without either eating or drinking; and only five days when eating solid food without drinking.

An idea prevails among horse-men that a horse should never be watered oftener than three times a day, or in twenty-four hours. This is not only a mistaken idea but a very brutal practice. A horse's stomach is extremely sensitive, and will suffer under the least interference, causing a feverish condition.

Feeding a horse principally on grain and driving it five hours without water is like giving a man salt mackerel for dinner and not allowing him to drink until supper time—very unsatisfactory for the man.

If you know anything about the care of horses, and have any sympathy for them, water them as often as they want to drink—once an hour, if possible. By doing this, you will not only be merciful to your animals, but you will be a benefactor to yourself, as they will do more work; they will be healthier; they will look better, and will be less liable to coughs and colds, and will live longer.

If you are a skeptic and know more about horses than anyone else, you are positive that the foregoing is wrong, because you have had horses die with watering them too much, and boldly say that the agitators of frequent watering are fools in your estimation, and you would not do such a thing. Just reason for a moment, and figure out whether the animal would have over-drunk and over-chilled its stomach if it had not been allowed to become over-thirsty. A horse is a great deal like a man. Let him get overworked, overstarved, or abused, and particularly for the want of sufficient drink in warm weather, and the consequences will always be injurious. Sensible hostlers in large cities are awakening to the advantages of frequent watering. Street car horses are watered every hour, and sometimes oftener, while they are at work. It is plenty of water that supplies evaporation or perspiration and keeps down the temperature.

What old foggy methods amount to may be seen by the change in medical practice to man. Twenty

years ago a person having a fever of any kind, or pneumonia, was allowed but a little water to drink, and then it had to be tepid. Today practitioners prescribe all the iced water the patient can possibly drink; and in addition, cold bandages are applied to reduce and control the temperature of the blood. What is applicable to man will never injure a horse. Use common sense and human feeling. Don't think it is a horse and capable of enduring any and all things. A driver who sits in his wagon and lashes his worn-out, half-curried, half-fed and half-watered team should never complain of any abuse he may receive from his master or employer, for he is lower in character, harder in sympathy and less noble than the brutes he is driving, and deserves, in the name of all that is human, the punishment of a criminal.—*Chicago Clay Journal*.

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DOING UP A HORSE'S TAIL.

A horseman gives the following explicit directions for doing up a horse's tail, and the method is worth practicing on until the operator becomes expert. It is cruel to deprive any horse of his only weapon against flies and insects, merely for looks or convenience; yet it is often desirable to quickly tie up the long hair in muddy weather, and in some kinds of work when the irritating insects are absent. First, says our instructor, take the tail in the left hand; with the right hand take hold at the upper end of a small bunch of hair, about eight or ten inches long; then select another bunch of the very longest hair in the tail, about the size of a man's finger. With both hands twist what is left in the left hand three or four times to the right; then with the right hand put it under and catch it with the left hand, and hold it until you take the long bunch or braid with the right hand and twist around, or wind around once or twice, according to the length of the hair, from the opposite direction. Then take the end of it, with what you have in the left hand, and the short bunch; twist all together in a hard twist, double it and find the band of the braid that you wound around the tail, and stick it under twice. After a little practice anyone, by observing the above rule, can do up his horse's tail on the road or in the stable, in two or three minutes, without strings or ribbons, and it will stay until taken down.

CATTLE FEEDING.

The Nebraska Farmer says: "A bunch of young steers weighing 1400 to 1600 pounds and of good even quality, showing the salutary effect of a strong dash of pure blood in their breeding, brings the best price of the day, and this is used as a fair measure of the market. Perhaps it is. That depends whether a certain market is to be taken advantage of in the highest degree by any breeder of good cattle is to be determined entirely by his methods of breeding and feeding. Nothing is better calculated to bring this lesson home to the stockman than an occasional visit to the stock yards where he can see the results of every extreme of breeding, and of feeding and no feeding, and corresponding prices, likewise. The best prices are seen to go to the young steers that are well bred for size and quality and that have been intelligently fed from date of birth up. They do not go to the big rough steers even though fed well. Well bred steers are not equal to it if the personal attentions of the feeder have been lacking.

Some men make a practice of handling well bred cattle, but do not seem to consider it necessary to give them any particular attention until they are put into the feed lot for market. This is a mistake. This is a sort that never gets to the top. But suppose they did, their lack of early development to the full capacity knocks off so materially on the weights made at maturity as to make a big leak at the outcome.

The season's sales of pure bred cattle indicate a reasonable activity among cattlemen in the matter of raising the quality of the herds to a higher standard of excellence. This disposition is to be highly commended. While there are being offered for sale to the farmers of the country good breeding cows, heifers and bulls, they should become thoroughly awake to the situation and get their farms stocked without delay with the very best blood available. There are Shorthorns, Herefords, Polled Angus and Galloway in the field. It is the province of this journal to keep this matter to the fore until every beef breeding farm in the State that has from forty to eighty acres of pasture, even, shall tell to the passerby the broad, red backs, with white faces or the shining black coats, that its owner is dipping into the pure blood from the fountain head in place of taking it second hand as per the haphazard

style of the scrub farmer. It is encouraging to note a favorable turn to the long lane. Though the end is not yet in sight, the mile passed this prosperous season puts us in view of better things."—*Indiana Farmer*.

CORNMEAL FOR COWS.

There is no danger of drying up a cow by giving cornmeal to her for the improvement of the milk. But it is quite possible that the cow may be given to make fat rather than milk, as is the habit with some cows, and in such a case there might be danger of the animal fattening instead of milking. In such a case any kind of good feeding would have the same effect. The writer has been feeding cows for making butter for over thirty years, and has never found any difficulty in this way, the cows being fed from eight to twelve pounds of the meal daily, as they could digest it profitably. If the cow fattens instead of milking, it might be a good thing to let her get fat and sell her and get a milking one instead. Shorts is not a good food for milk—it would be better to give ground oats with the meal. Apples in any way are beneficial to cows that are milking.—*New York Times*.

MUTTON MERINOS.

There are being bred several varieties of this breed in the U. S. that have register associations. The sheep are rivaling the famous French Merinos in early maturity, size and symmetry. Besides these, there are claims of the highest mutton qualities for these grand sheep.

They do certainly please the eye, but is this enough? How do they kill? How is the meat? Have any critical tests been made? To a man up a tree it looks very much like these men are making a mistake and fooling away a grand opportunity to ride the top wave to popularity in this progressive era of sheep raising in the U. S.

Such opportunities are accidentally or purposely avoided. Do they know better than to risk their sheep against other mutton breeds in the killing contest? If the Merino sheep is to become the National mutton sheep, as they have long been our National wool sheep, it is high time the evidences were all in. Is it the men or the sheep that are not coming to time?

No one who has seen these sheep can doubt the future usefulness of these breeds. It is necessary, however, that all doubts should be forever removed; that theories should become facts.

We do not raise this question for controversy. The suspicion has been whispered and is quite too general to be dodged that a Merino mutton is a myth, a thing no one has believed. There has been no pains taken by men who breed these sheep to meet the British breeds in critical contests on the mutton line.

No one who has seen and handled these mutton-Merino sheep can doubt all that is claimed for them, unless they don't want to; but remember, there are not wanting those who do not want to believe these sheep are good enough for mutton but are good enough to cross Cotswold and other rams onto for a good feeding lamb.

It is claimed the demand is so immense for these sheep that no one can afford to make wethers to feed and show against Shropshires.

This is too thin in this very practical age. We would thank anybody who could give us facts on this line. We are hungry for mutton-Merino facts.

The Southdown and other mutton and lamb raisers flood the country with figures, and why? They have had the decisions of competent, expert juries on the question, not in show pens alone but on the flock. Such are due the sheep which we call mutton-Merinos.—*Grange Bulletin*.

WINTER CARE OF SWINE.

To do their best, or even fairly well, swine must be shielded from the inclemencies of the weather, says Galen Wilson. They should have, as near as possible, summer conditions in winter. This can be easily and cheaply accomplished. The pen should be floored, first packing earth between and flush with the face of the sills. The floor will then rest partly on the sills and the earth. Cold air cannot then get under the floor to chill it. Beneath where the animals sleep, floor, earth and sills will be warm all winter. The sides of the pen should be double boarded, and the space between be filled with sawdust or cut straw, packed close. The under side of the roof should be ceiled with boards or building paper. The door should be in the end, if a low pen, and be

in two parts, an upper and a lower. In all but extremely cold weather the upper part of the door can be thrown open, or partly, to give necessary ventilation. Hang a thermometer inside, and keep it at about sixty degrees. This gives "summer conditions," so far as temperature is concerned.

About six quarts or a peck of beets and an ear of corn twice a day will winter a mature breeding sow as well as it can be done. They need no "slops" nor scarcely any drinking water. There is sufficiency in the beets. In the absence of beets, the feed should be made up principally of wheat bran, mill feed, a very little corn, cut and steamed clover and some refuse, or other vegetables of any kind. A shovelful of coal ashes, earth or rotten wood occasionally is desirable. Salt should be placed before them occasionally in bulk, but not in greasy dish-water or other slops. Let their drinking water always be pure and not too cold. Pleasant days, when the temperature is agreeable, they may be allowed to run out.—*New York Voice*.

SWINE NOTES.

A farmer sometimes maligns the buzzards and the dogs for spreading the swine plague. Often there is cause for it but need not be if every farmer would burn or securely bury such hogs as soon as dead. Another point worthy of consideration is that oftentimes proper sanitary conditions and pure foods of several kinds will save the hogs, notwithstanding the fact that the buzzards fly over the farm daily for weeks as scavengers of adjoining farms, and the dogs have numerous runs across the farm for the same purpose. If this is not true why do the herds of some men escape, when subject to all these exposures? It is worth our time to give these matters serious consideration.

OREGON alone will send to market this season 50,000 head of beef cattle in unusually prime condition.

HIGH feeding increases the fecundity of the ewe. A greater number bear twins on flush meadow feed than on scant hill pasture.

Dairy.

VALUE OF COWS.

I need a cow. I can buy one for \$20.00 or another for \$50.00. The former will average 6 quarts of milk per day for 300 days per year. The latter will average 12 quarts per day for 300 days per year, on the same kind and amount of food. Which cow should I purchase? Let us see which is the cheaper cow. We have little doubt that the \$20.00 cow would generally find the quicker sale.

Now say we allow 15 cents for feed per day for each cow; then for 365 days each cow's feed will amount to \$54.75 per year. Now put the milk of each at 4 cents per quart. The \$20.00 cow would earn \$72.00 or \$17.25 above her feed, and the \$50.00 one would earn \$144.00 or \$89.25 over her feed.

Now if a cow costing \$20.00, nets \$17.25; then a cow which nets \$89.25, must be worth \$103.47. Or if the latter cow be considered as worth but \$50.00, the price paid for her, then the \$20.00 cow is worth only \$9.66 or less than one fifth the value of the \$56.00 one.

Try our figures and be convinced.

But it may be that the \$20.00 cow would be worth more for beef, which should be counted, also her milk, perhaps, might give more butter in proportion to quantity, but for milk alone the \$50.00 cow is far ahead. And we conclude, that in most cases, the apparently low-priced or \$20.00 cow is over-estimated. Our figures bear us out and we hope to convince some at least that low-price is not always cheaper.—[Ed.]

DAIRYING IN THE UNITED STATES.

The men employed in the business number 750,000 and the horses are over 1,000,000. There are over 12,000,000 horses all told.

The cows and horses annually consumed 30,000,000 tons of hay and nearly 90,000,000 bushels of cornmeal, about the same amount of oatmeal, 275,000,000 bushels of oats, 2,000,000 bushels of bran and 30,000,000 bushels of corn, to say nothing of the brewery grains, sprouts and other questionable feed of various kinds that are used to a great extent. It cost \$450,000,000 to feed these cows and horses. The average price paid to the laborers necessary in the dairy business is probably twenty dollars

a month, amounting to \$180,000,000 a year.

The average cow yields about 450 gallons of milk a year, which gives a total product of 6,750,000,000 gallons. Twelve cents a gallon is a fair price to estimate the value of milk at, a total return to the dairy farmers of \$810,000,100, if they sold all the milk as milk. But 50 per cent. of their milk is made into cheese and butter. It takes twenty-seven pounds of milk to make one pound of butter, and about ten pounds to make one pound of cheese. There is the same amount of albuminoids in 8½ pounds of milk as there is in one pound of beef. A fat steer furnishes 50 per cent. of boneless beef, but it would require 24,000,000 steers weighing 1,500 pounds each, to produce the same amount of nutrition as the annual milk product does.—*American Analyst*.

THE LARGEST CREAMERY.

Seven Hundred Farmers Supply it with Cream Daily.

Probably the largest creamery in the world is that at St. Albans, Vt. The building itself is three stories high, with 9,000 feet of floor room. In the cellar is the boiler, a forty horse power engine, and the tanks for buttermilk. The first floor is the factory proper, in which the cream is received and pumped up to the story above, where are ten tanks holding 600 gallons each, and where are also the testing rooms, offices, etc. It is returned again to the first floor to be churned, worked and packed as butter into tubs. The third story is used as a storage room for tubs, salt and other equipments.

All cream received is tested frequently enough to obtain a thorough knowledge of the amount of butter fat in the average products of the farmer's dairy, and he is credited not only with so many pounds of cream, but also with its butter value. The average of butter fat is less than 4 per cent., but the extremes are 3.25 and 4.75. The milk is not brought to the creamery, but is received at forty four stations located at various points within twenty-six miles of St. Albans, and there the cream is separated and shipped in special cars to the creamery.

About 700 farmers with 12,000 cows are now supplying the cream for the factory, and the average daily product is 10,000 pounds, but it is gaining patrons each month, and they hope to reach their full capacity of 20,000 pounds daily.

They run ten churns, each of which will churn 500 pounds of butter at a time, and four butter workers, upon which eighty pounds can be worked and salted in a very few minutes. It takes a carload of salt every two months, and the business keeps sixty hands employed. The proprietors claim that they have a demand for even more butter than they will be able to make when running to the full capacity, and at prices which are very satisfactory, although they were organized less than a year ago, or in October, 1890, and commenced business in November.—*American Cultivator*.

THUNDER STORMS AFFECTING MILK.

It is a very old belief of our farmers, and at one time quite general, that during a thunder storm sweet milk was likely to turn sour very rapidly, and that this change was due to the thunder or some unexplained electrical force. There is, however, just this much truth in the idea or belief, and no more. During the season of thunder storms the weather is usually warm, and as is well known high temperature very soon develops acidity in milk and hastens the separation of the cheesy matter from the whey. That either thunder or lightning has any direct effect in souring milk is no longer believed by our practical dairymen, for if it was a fact that thunder storms had any such effect they would work most disastrous results to the milk supply of our great cities, as well as to the butter factories and creameries all over the country. If you will store your milk in a cool room and see that the temperature does not rise during a thunder storm, we are inclined to think your belief in its direful effect will fade away before the end of the first summer.—*New York Sun*.

PER CENT. OF BUTTER.

Somebody with a head for figures has been to the trouble to search out how much butter to the hundred pounds of milk is produced on an average by the creameries in different parts of the world. The result is given in the following table. If the figures are correct, then Manitoba can get most butter out of 100 pounds of milk.

Manitoba.....	4.76
Quebec.....	4.25
United States.....	4.00
Ontario.....	3.75
All Europe.....	3.50

BITTER TASTE OF CREAM.

Towards fall there is always more trouble in making good butter. The grass has not the tender sweetness of early in June. There is less milk, and where few cows are kept it takes longer to get a churning. Sometimes when cream stands several days a mold forms over its surface. This is more or less poisonous, and is prevented by frequently stirring the cream, and keeping it only where pure air surrounds it. Cows late in the fall often eat weeds that injure the flavor of both milk and its products. Ragweed, which is abundant in many grain stubbles after harvest, is bad for cows. They avoid it as much as possible, but get enough with the clover to injure their milk. This is another argument against pasturing young clover in the fall. At that season fodder corn ought to be plenty on every farm where cows are kept, and few things are better to produce good milk.

AN ASSERTED DISCOVERY.

It is asserted by a California paper that a Swiss savant has made a discovery which seems almost to reverse known natural laws. He reduces milk to a dry powder in such a manner that by the addition of water it at once assumes all its natural properties. It is claimed that milk in this form is much better than canned or condensed milk for one reason—it has no sugar in it.

THE *Creamery Journal* says the Butter Extractor, at the Iowa State Dairymen's annual meeting, under the charge of Mr. Northrup, of Belkows Falls, Vt., did all that is claimed for it.

THE dairyman who does not breed his own cows, but merely buys fresh ones and sells them when they go dry, buying other fresh ones in their place, will need to be a good judge of a dairy cow.

THE average annual yield of milk per cow in Herkimer county, New York, is estimated at 2,000 lbs. less than it was thirty-six years ago, on account of poor cows and poorer pastures.

Apiary.

BEES AND GRAPES.

We clip the following letter from the *American Bee Journal*:

In reading my bee-periodicals and some of the local papers, I see that there is considerable said from time to time about bees damaging grapes, as well as some other kinds of small fruit. I claim that it is all bosh, unless the fruit is first injured in some way or another. I make this assertion from my own experience in growing grapes in the same yard with a number of colonies of bees, at the same time using the grapes as shade for the bee-hives. As my attention has been called to this matter at different times, I have given it much thought, and watched it most carefully.

In the last three years there has been only two instances where the bees have worked on grapes in the least.

In the first instance the damage was caused by the chickens picking and eating the lower branches, or clusters, that were hanging low down within their reach. The second instance was caused by a very severe hail-storm, which bruised or punctured the grapes enough to expose their seeds, enticing the bees to work on them. This lasted only for a few days until the bruises became seared over. You will observe that in both instances the fruit was first injured before the bees would have anything to do with it, and I do not believe that bees will hurt grapes or other kind of fruit unless it is damaged by something else. Using them as I do for shade for bee hives, large clusters of the delicious fruit hang all around the hives—yes, and even within a few inches of the entrance to the hive. This must certainly give a pretty good chance to test the matter. In conclusion, I will say that I really believe that the most of this complaining is caused by prejudice.

B. E. RICE.

BOSCOBEL, WIS., Dec. 23, 1891.

BEES NECESSARY FOR FERTILIZING PLANTS.

In *Gleanings* you say something about not succeeding with cucumbers. If you should ever come west of Chicago, it would pay you to come to Minneapolis, just to see a greenhouse belonging to a German gardener. I do not know the exact size, but I think it covers

nearly two acres, besides two acres of hot beds. He devotes the fall and winter to lettuce, and then fills them up with cucumbers. His sales from cucumbers alone would amount to several thousand dollars. During the winter and spring he is obliged to keep a hive of bees in each house to fertilize the blossoms, or else very little fruit sets.

Last April his bees all swarmed out, and he lost all the queens but one, and a few weeks after he came to me for more bees. He told me in that time he had lost more for not having them than the amount he paid me—\$27. His cucumbers in the greenhouses do not run on the ground, but on trellises of cord and wire slanting up about the roof of the house. Anyone, by stooping a little, can see the whole length of the greenhouse under the vines, and see cucumbers hanging down all around.—E. R. P. in *Gleanings*.

WHERE TO KEEP COMB-HONEY.

A room in which to keep comb-honey in good condition should be as dry as possible. During pleasant weather a window protected by a wire screen, to keep out bees and other winged insects, should furnish ventilation. When the weather is damp the window should not be closed, but a little fire should be started in the room to drive out the dampness. A high temperature will not injure honey. If the temperature could be continually maintained up in the nineties, the quality of the honey would be improved.

As the bees always keep their honey in the dark, it seems to me that the room should be kept dark, in which honey is stored.

BEEKEEPING I have found a most delightful occupation, but one that takes time if it be made a specialty. Many farmers refuse to keep bees and go without honey because they have no time to attend to them. Fair success and permanent beekeeping may be enjoyed, furnishing enough honey for the family, if a swarm be placed in a roomy hive and placed in the loft of the barn or in the house garret. A spout six inches wide by half an inch high must lead from the interior of the hive, six inches outside of the building, and must slope slightly to carry off rain. I have a busy farmer friend who has kept bees thus many years with much profit. They never swarm.

ROLAND SMITH,
"Sunny Rest."

Poultry Yard.

HOW TO MAKE CHICKENS GROW RAPIDLY.

There is no reason and very little profit in allowing chickens to be slow in coming to maturity. The small biped starts into life all ready to grow rapidly, and only lack of proper food will keep it from foraging ahead. Whether chicks are reared in brooders, or by hens, they must have plenty of warmth, pure water and cleanliness, and when these are secured we come to the important matter of food, which is one of the chief factors in rapid growth. This should contain just the elements that a growing chick requires, in such shape as to be readily digested. Raw eggs beaten into bread crumbs are excellent for the first few days. For this purpose the sterile eggs that have been removed from the incubator, or from under the hens at about the tenth day, will serve very well. The chicks will also delight to pick at rolled oats (which are steam-cooked), and this is excellent for growth. Very soon they may have boiled wheat, and one can almost see his chickens grow while they are eating it. A little cooked potato, or cooked vegetable will not come amiss occasionally as they grow older. Whatever is given them should be thoroughly cooked until the chickens are eight or ten weeks old, if the most rapid growth is to be secured. When they can run at large upon the ground they will obtain an abundance of tender grass and other green stuff, but if confined, there is nothing better than bruised clover leaves, scalded or cooked into a little bran or middlings. Some bulky food is necessary, or indigestion will ensue. Clover provides both bulk and growth material, and where milk cannot be obtained the liquid in which clover hay has been steeped will be a most excellent substitute. Lean meat is good to feed occasionally, but it is best cooked until it will readily fall apart, while fresh ground bone is one of the cheapest, and probably one of the best foods for growing chickens and for laying hens that can be found. Any one who keeps a considerable number of hens or raises chickens in large quantities will find a bone-cutter almost invaluable. Feed very little corn to growing chicks until it is desired to fatten them. Corn is essentially a heat-producing and fat-producing food. There

is one other essential to rapid growth and that is exercise. Chickens will get this if allowed to run with a hen, but if reared in brooders they must be made to scratch, or good food will avail them but little.—*American Agriculturist.*

FEEDING FOR WINTER EGGS.

Experiences of Poultry Keepers in New York, Minnesota and Pennsylvania.

In reply to the queries "Did your hens lay last winter? If so, how did it happen?" three poultry keepers gave their experiences in the *Philadelphia Farm Journal*. A correspondent from Medina, N. Y., wrote:

"As a hen feeder of long standing I answer yes, but not much in the month of December, as they had not all got through with or recovered from molting. I keep an egg-laying variety, the Brown Leghorn. The principal feed was corn and barley. Warm ground feed with the pick-up from the table fed in the morning, but do not feed much wet feed in cold weather. Screenings of various kinds mixed with barley, fed morning and noon, the largest feed at noon. Fed once a day, morning or noon, clover heads, leaves and seed that work to the floor in feeding other farm animals. Feed this dry. The usual supply of meat, water, gravel, coal ashes, etc., were given. The hen-house is sided with matched pine, painted, and the roof tightly boarded and covered with tarred paper before shingling, and constructed so as to retain the animal heat sufficiently to keep the fowls warm in cold weather."

The Minnesota correspondent gave her experiences as follows:

"Yes, mine laid all winter. I have ninety hens which I keep in two houses; forty-five old hens in one and forty-five pullets in the other. In the coldest weather I feed a little good wheat early in the morning, then at 9 or 10 o'clock I give them a few ground oats mixed with milk. Then in the evening I gave to each set of hens six good ears of corn pounded up. Then they will shell it easily. Size of hen-houses, old house, 12 by 20; new one built last fall, 10 by 16. Houses must be kept clean and litter of some kind given them two or three times a week. Plenty of grit is also necessary. Lime and sand mixed is what I used this winter. Limestone pounded up is excellent. My hens were not let out during the month of March,

and they laid 1,553 eggs. I forgot to mention that they had green food nearly every day."

A Pennsylvania woman wrote:

"We can answer that question in the affirmative. We have ninety-five Light Brahma hens. We gathered from November 1 to April 1, 340 dozen eggs. We consider that pretty fair laying for the winter season. We fed mixed mess of wheat bran and cracked corn, two parts bran, in morning, mixed with hot water, half a peck at a mess; at noon, half a peck wheat screenings; in evening, half a peck of corn. Twice a week fed met cracklings chopped fine. Fed some of Barker's powder to keep fowls in good condition. Never let them out of the house in cold winds or storm or when there was snow on the ground. Our house is 12 by 32 feet, divided into three rooms. One room has wide front, in which we throw all the sweepings of barn floor for fowls to scratch in."

ANNUAL COST OF FEEDING A HEN.

What is the annual cost of feeding a hen? There are of course differences, according to the breed, namely, the size, activity, etc., and particularly generative activity, according to a correspondent in *The Poultry World*, who says: "An egg represents a large amount of nutriment of condensed sort, and a hen that lays 200 eggs per year will need some sixteen or seventeen pounds more of pure nutriment, for this purpose alone, than one laying but half that number. And every additional ounce of fat laid on your fowls' ribs must go in at the bill, so that fattening breeds consume more than non-fattening ones under equal circumstances. Again, a very active fowl uses up entirely, without accounting for it in eggs or fat, nutriment enough, in excess of a quiet one, to pay for her liveliness. Every flap of your turkey's wing costs a grain of corn."

"From a series of observations we can say that the average fowl at large consumes not far from a bushel of corn per year. If at large she supplies herself with green food and picks up insects, larvae, etc. If kept confined animal food must be artificially supplied, such as crushed chandlers' scraps, chopped sheep's lights and livers and house scraps. In summer you must add to this short, tender grass, and in winter raw cabbage or boiled potatoes or other green vegetables. This for a year brings the estimate for the cost of the food of

the confined fowl up to the equivalent of a bushel and a half of corn. It will generally be found that when corn varies in prices the cost of vegetables and animal food varies with it, so that this estimate is correct."

POULTRY EXPERIENCE.

It is good evidence when the farmers' institutes discuss poultry-keeping that farmers are becoming aware that there is profit to be derived from keeping fowls when they are looked after in a business way. At a recent farmers' institute in Leighton's Corners, N. H., Mr. J. L. Gerrish spoke on the subject of poultry and egg-raising. The *Mirror and Farmer* gives a condensed report of his remarks as follows: "He could see no reason why we cannot successfully compete with the West in the poultry business; and what article of food is there that is more appropriate and agreeable than the products of the poultry yard for the numerous summer boarders that seek the New England hills as a place of rest and recreation? They make a handsome addition to the business of the farmer. Many of the reported failures in the poultry business come from people who go in too heavily in the start without the necessary knowledge and experience. It is better to begin moderately and grow into the business. Make the venture light. The larger and more productive business will follow. Poultry must be kept clean and dry. These two points are of prime consideration. The soil and the hen-house must be kept scrupulously clean. The free use of kerosene and whitewash will prevent injury from vermin. With a moderate flock \$1 profit per annum ought to be realized per hen. Foxes are a serious trouble. Hang rusty chains or rusty pieces of iron up around your hen house and they will not molest the hens. As a rule, at some distance from a market, it is better to breed for poultry as well as for eggs. The larger breeds are the better for poultry, and the smaller for eggs. He would not feed corn heavily, unless it be in winter. Hens need balanced rations as well as stock do, and they also need a variety. The egg-producing material must be in the food, or eggs will not be plenty. In cold weather the food should be warm. With a very little simple contriving, the facilities for warming poultry food can be provided without much cost. The Plymouth Rocks and Light Brah-

mas the speaker has found to make a very satisfactory general purpose cross, when fed with wheat, wheat screenings, meat scraps, a mixture of wheat, bran and skimmed milk or even water, with a moderate allowance of corn thrown in for variety. Always put a little salt in the food for hens, and a head of cabbage should be suspended within the reach of the hens, as it provides vegetable food, and exercise at the same time. Poultry and fruit make a good combination. The hens are good for the fruit by destroying the insects, and the insects are good feed for the hens. He has succeeded the past season in growing a fine crop of peaches by letting the hens run among the trees.

SUGGESTIONS FOR THE POULTRY YARD.

The season is here when in poultry yards, where birds are kept in damp and ill ventilated houses, the foundation for roup—that most fatal of all poultry diseases—is laid. An ordinary cold neglected very soon develops into roup: hence first symptoms must be taken in hand at once. The first sign is sneezing and running at the nose. As soon as this is observed the affected bird ought to be isolated at once, placed in a warm spot where there are no drafts and the usual remedies and preventatives administered. Bear in mind that cold weather is less dangerous than damp. It is a good plan now to give iron tonic in water all round, especially to the late chickens. Diarrhoea is another disease caused by cold and wet weather; in chickens it is often due to improper diet. Bone dust is an excellent preventive, and growing chickens should always have it. If symptoms appear, try feeding with boiled rice, mixed with a little powdered chalk. If the case is bad, try rice boiled in milk. As soon as a fowl is ailing, isolate it until you are certain whether the sickness is contagious. Many diseases are contagious, and whatever the attack may be, the sick birds will recover soonest if alone.

POULTRY CHAT.

There is wisdom in keeping a comfortable, well-sheltered house for poultry. There is a secret in caring for laying hens; a comfortable coop is one secret in obtaining eggs from a flock of hens in winter.

Poultry houses should face to the south if possible. Be careful about this when you build your houses, for remember that sunshine has a commercial value, and the pens should have a good supply of this, especially in winter.

Many who are building new poultry houses are having wooden floors in them, raised several inches from the ground, to admit of a free circulation of air underneath to prevent dampness. A floor of this kind should be tight, with a covering of three or four inches of dry earth, to be replenished once a month.

Eight to ten females to one male is better than any more or less, as experience shows. This refers to stock that is confined within the limits of a run and carefully bred. Stock running at large on the farm may increase the number by six or eight, but this is not breeding with care for the finer points in view.

Poultry breeding without sufficient thought or adequate investigation has been more or less mongrelized, so to speak, in past years, but now it is coming down to a real science and study, the results of which are apparent to any intelligent farmer who has kept several of the finer breeds of poultry.

The Malay game fowl resembles somewhat the Indian game, yet is much smaller and inferior to the latter. The Indian game male weighs from nine to eleven pounds at maturity, females from seven to eight and one-half pounds. They are a neater and more stylish fowl than the Malay and should not be classed with them.

The habit of many farmers of saving for breeders turkeys too small at the holiday season for other use is one main cause why this fowl so rapidly runs out. In and in breeding is another reason, and the farmers who are careless and shiftless enough for one fault will probably commit both. Old turkeys are the best breeders. They give larger eggs with stronger and more vigorous chicks. Young turkeys at the best are tender enough. They should have in parentage whatever advantage it is possible to give them.

BEANS and peas, cooked and thickened with bran, and feed twice a week, is an excellent food for laying hens.

GRAIN is deficient in lime and mineral matter, but bran is rich in nitrogen, carbon and mineral matter.

Home Department.

IT MAKES A DIFFERENCE.

A boy will stand and hold a kite
From early morn till late at night,
And never tire at all.
But, oh! it gives him bitter pain
To stand and hold his mother's skein
The while she winds the ball.

A man will walk a score of miles
Upon the hardest kind of tiles
About a billiard table.
But, oh! it nearly takes his life
To do an errand for his wife
Between the house and stable

A girl will gladly sit and play
With half a dozen dolls all day,
And call it jolly fun.
But, oh! it makes her sick and sour
To 'tend the baby half an hour,
Although it's only one.

A woman will—but never mind!
My wife is standing close behind,
And reading o'er my shoulder.
Some other time, perhaps, I may
Take up the theme of woman's way,
When I am feeling bolder.
Detroit Free Press.

NINE THINGS TO KNOW.

1. To SAVE WASHING. — Tack thin covering of cheese cloth or lawns across tops of blankets. This can be replaced when soiled.
2. Hang all bed coverings out of doors on windy days. If treated thus, they will not require frequent washing.
3. Before washing blankets, whip out the dust.
4. Do not hang pillows in the sun. The oil in the feathers will emit a disagreeable odor.
5. When cane seats have become limp and stretched, wash well with hot water and place in draft to dry.
6. Use grated horseradish for poultice in neuralgia.
7. Apply old tea leaves to inflamed eyes.
8. For hemorrhage hold arms of patient over head for five minutes.
9. For headache put cold water simultaneously on feet and back of neck.

Homely Thoughts for Thoughtful Women.

BY MRS. H. STEIGER, MD.

Without being conscious of the fact most women waste a good deal of time and strength in their ordinary occupations, not by doing more than they should, or doing things better than they need to be done. It is their methods that are at fault.

The most common way by

which we thus fritter away time and energy, is in the handling of things we use more than once when once handling would answer the same purpose. Of course it is not always possible to put the thing in place at once, but when it is, we save during the course of the day; probably half the steps we would otherwise take by setting or laying things down out of place.

The routine of sweeping, or setting a table, or any other housework, can be simplified to a degree that is almost incredible by a little painstaking in this respect, yet we find people, who are careful in most things, regardless of the difference between placing things at once where they belong and misplacing them for the time being, with a view of putting them where they belong later. We need only to watch the ease with which one person will take a room in hand, sweeping, dusting and putting it in order as fast as she goes over it, without confusion or inconvenience. And then another who habitually makes a big thing of whatever she undertakes, by repeated handling, to understand the difference; and how work may become easy or hard according to the manner in which it is done. It often makes all the differences between tidiness and untidiness, or between worn out, and well preserved women. The habit also makes a good deal of extra work for other people since they, like other people, often forget their intention of putting away things they leave out of place later. One need only to take a little pains in order to overcome such want of care and surely we all wish to find the easiest way to do things that often makes the lives of men and women harder than need be, is a habit of letting their thoughts dwell upon disagreeable duties and shirking them till a time comes when they have to be done. How better to take them in hand at once if the case admits of so doing, or else put them out of mind till the right time for their accomplishment arrives. Nothing is quite as good or bad as we expect it to be, and the more our thoughts dwell upon a thing the more disposed we are to magnify it.

Bear in mind that the web of our lives is largely made up of such material as we chose to weave into it, and if we would make them pleasant to ourselves and others, we must hold on to what is agreeable and cast aside the rest as soon as our obligations in regard to them are met.

PHILOSOPHY OF THE TABLE.

Ideas That Arise Naturally Between the Soup and the Coffee.

A sick plate is beyond the reach of physic.

Uneasy fits the coat the stomach pays for.

When dinner and appetite fall out it is time for arbitration.

One man may be sentimental, another hungry; no man can be both at the same time.

The first lesson in dyspepsia is a surprise to him who thinks he knows everything.

There is little choice between a dinner with no appetite and an appetite with no dinner.

Poverty is an unpleasant dose, but it will be a sure remedy for many ills of the rich.

The devil hath many disguises. Beware of him when he dons the cook's cap and apron.

Mix your remembrance of a good dinner with a gratitude to heaven and the host.

True charity warms the heart of him that gives and him that takes; the other sort is more chilling than cold soup.

The life of the dinner lieth in deliberation; the death of the diner may lurk in the lack of it.

The appetite is a tool of nature's tempering; if you will listen to her and reason you may learn the best way to sharpen it.

Man prayeth for a long life; let him study how to use a short one and his prayers may be answered.
—Joseph Whitton in Town Talk.

HOW TO DRINK MILK.

Some complain, says a contemporary, that they cannot drink milk without being "distressed by it." The most common reason why milk is not well borne is due to the fact that people drink it too quickly. If a glass of it is swallowed hastily, it enters the stomach and then forms in one solid, curdled mass, difficult of digestion. If, on the other hand, the same quantity is sipped, and three minutes at least are occupied in drinking it, then on reaching the stomach it is so divided that when coagulated, as it must be by the gastric juice, while digestion is going on, instead of being in one hard, condensed mass upon the outside of which only the digestive fluids can act, it is more in the form of a sponge, and in and out of the entire bulk the gastric juice can play freely and perform its functions.—*Scientific American*.

WHAT THE BODY REQUIRES.

"Chemistry teaches us what the body loses each day in nitrogen and carbon, and how much food is necessary to repair the loss, but it says nothing about the nature of the foods which should be supplied the body to preserve health. Is the nature of our food a matter of indifference to the body? Can man nourish himself according to his tastes, his caprices, his fancies? Can he, as he finds convenient, adopt a flesh diet or a vegetarian regimen, eat of flesh or legumes? Can he replace the nitrogen and carbon which his body consumes, by milk exclusively? Many opinions without foundation have been expressed upon this question. Certainly there is a tendency to the abuse of flesh foods, for the double reason that they are easily procured, and that they are believed to be necessary, even indispensable, elements of a complete dietary. It is certain that lentils, beans, potatoes, bread and milk are able to supply us all the nitrogen and carbon necessary, as well as is flesh food.

"Flesh certainly is necessary not more than once or twice a week. The use of flesh or fish repeated twice a day is harmful to the digestive organs and to the drain. The peasantry of the South take meat only once a week, and enjoy excellent health, and are able to endure the hard labor of the fields."

IRONING.

"No, I don't get very tired when I iron," said an experienced laundress to a lady who was expressing sympathy at her hard work. "At least it's only my arms and shoulders that get tired. I don't mind standing if I can have things my own way. I always have a cushion for my feet when I stand at the ironing-board. It is made of a dozen thicknesses of old carpet-lining, covered with drugget. The lining is cut in squares and very loosely tacked together with long stitches. The drugget is cut of the required size, the edges are turned in and over-handed, then strong stitches are sewed through about every two inches over the surface of the cover. I have a little loop on two corners of the rug and hang it up by the loops. In this way it does not curl up and get out of shape, as it would if it were hung by one corner. I have another rug in front of my dish-washing table—indeed, there are

a number of them around the house; and when I have any work that requires standing, one of them invariably comes on to the floor under my feet.

"If housekeepers realized how much of their strength could be saved by a few of these simple devices, they would not fail to provide them. I can stand at my table as long again without feeling weariness if I have one of these cushions or pads to stand on. I think they might be a profitable article of trade. I have used them for years, and I can't see why they have not been generally introduced. They seem as necessary to me as holders and stove-brushes."

—The Ledger.

KEEP A CHEERFUL KITCHEN.

A bright, pleasant kitchen is a prime requisite in a house. While all servants do not care for pictures or plants, it is well to try and see if they do not appreciate these additions to the sightliness of an apartment which is to them eating, working and sitting-room. It is here that they spend most of their waking hours, here they receive their friends. It is an incorrigibly slatternly maid who does not feel some pride in keeping her environments neat and attractive. If the coat makes the man, the kitchen often has much to do with making the cook. A few of the gay chromos which have been banished from parlor and bed-room walls, a rocking chair, a bright rug, and half a dozen plants in the windows, are an investment that will cost little and will be worth treble their market value if they make a good-natured cook and a cheerful kitchen.

IT TAKES A WOMAN.

To make a little go a great way; to understand a baby's prattling; to make a wise man turn foolish; to make a man of a foolish boy; to interpret a man's unspoken thoughts; to buy that dear little cup and saucer when she really meant to buy a pair of gloves; to entertain a crowd of people smilingly when her head feels as if a hundred little demons were hammering it; to make a bonnet out of last year's hat; to hunt in her old hats for the name of a well-known importer, to sew it in her bonnet and wear it as the latest importation.

FOR THE HOUSEHOLD.

A NEW WAY TO COOK CRANBERRIES.—Sort and wash the berries, put them on the fire in cold water. As soon as they are scalding hot, take them off and drain them in a sieve. Thus they lose much of their acrid taste, but not their flavor. The berries must not be in the sieve a minute, for fear of losing their juice. Turn them into a pan. Add sugar in proportion of one pound to four quarts of fruit. Put in the berries and boil them soft, but not to a mash. Cover with a napkin while cooling, and stir them gently occasionally. Small bowls make very good moulds.

TO MAKE LIGHT MUFFINS.—Sift three pints of flour; beat six eggs, leaving out the whites of two; stir in as much flour as can be mixed in the eggs, add milk to thin, then the remainder of the flour and five tablespoonfuls of yeast, beat ten minutes, and pour in two ounces of melted butter. Have the batter stiff; set in warm place fifteen minutes. Pour in greased muffin rings, and bake in a very hot oven.

ROAST GOOSE.—Take a fat young goose, rub well with salt. Make a dressing of Irish potatoes, boiled and mashed, a tablespoonful of butter; a minced onion with pepper and salt. Fill the body of the goose and place in a pan; grease well with butter and pour in a tea-cupful of boiling water. Set in a hot oven and baste frequently until every part is brown. Serve with onion gravy and apple sauce.

FRAGRANT SOUTHERN RUSKS.—Sift a quart of flour; in the centre of it put two cups of sugar, one of lard and butter each; two beaten eggs, two cups of milk, a pint of yeast and one grated nutmeg. Mix all together, work well and set to rise. When light make in small rolls, work over with butter and sugar, let rise again and bake.

You can prevent your pretty new gingham from fading if you let them lie for several hours in water in which has been dissolved a goodly quantity of salt. Put the dress in it while it is hot, and after several hours wring it out, dry and wash as usual.

Never bite or pass sewing silk through the lips, as lead poisoning has been known to result from such a habit, as it is soaked in acetate of lead to make it weigh heavier.

For perfect popping, corn should be a year or more old, and care should be taken to keep it where mice cannot reach it.

*For the American Farmer.***A HERO IN HIS FIRST BREECHES.**

BY AUNT HANNAH.

Fully convinced that we are cherishing an embryo Spartan in the family, I think it well to impress upon the minds of his contemporaries an instance of his rare courage and fortitude, in order that in the future when he is numbered among the great men of his age, as he undoubtedly will be, this birthright may not be open to doubt as in the case of George Washington's little hatchet story.

His christian name, Amzi, will I think be sufficient to establish his identity in the future, as there are certainly no other Amzis just four years old at this time, and if there should chance to be another, it is hardly possible that he would be capable of such heroism.

Our little Amzi, a few mornings ago, became the happy possessor of five cents which his mother for reasons of her own, thought best should be deposited in his savings bank, and so directed him; he went directly to the bank which stood upon the mantle, took it down and handled it for a moment and then returned it to its place. His mother thought no more about it till the next morning when she noticed him lift the bank and take something from beneath it, she asked him what he was after.

"Only my five cents," he replied.

"But," said his mother, "I told you to put it in the bank."

"Yes mamma," said the little scamp, "but I want to buy a ball with it and so I just put it under the bank."

"Very well you can put it in the bank now, as you are not to buy a ball," was his mother's unsympathetic reply, and as she had full confidence in her boy she paid no further attention to his movements.

Imagine her surprise then when an hour or two later she met Amzi coming in the front door tossing up a ball.

"Why Amzi where did you get that ball?" she asked.

"I bought it down at the corner with my five cents," he answered.

His mother who is more disposed to resort to mild measures with her boy than otherwise, simply took the ball from him telling him that as he had disobeyed her he could not have the ball, and that his five cents was also gone.

The poor little fellow gave up the ball with a rueful countenance but no tears, and then gave himself up to meditation. As he stood at the front window watching his

play fellows, different members of the family heard him from time to time giving expression to his feelings in an undertone. Now my ball's gone and my money too." "If I could only have caught it once, just once, it wouldn't be so bad." "I wouldn't take a little boys ball away when he had'n't had a bit of fun with it, why its worse than a whipping." "I wonder if mamma would'n't whip me and then give me my ball."

This practical thought took hold of the child's mind and after some deliberation he went to his mother with the proposition, but she told him she was not strong enough to whip him. Hopelessly and forlorn he went out into the back yard in search of consolation among his pets and playthings, but to no purpose. Such is the power of a cloud no bigger than a little India rubber ball to vex and destroy the happiness of even good boys. Misfortune pursued him that day, somehow he slipped from his velocipede and hurt one knee, and in chasing his cat he hurt the other, when he was drawn once more to his favorite resource in trouble, an invisible audience outside of the window. Here again he indulged in soliloquy. "If I had a little boy with both knees hurt and he had'n't caught his ball just once I wouldn't take it away from him," I wonder where it is and how it looks."

As his older brothers and sisters came in from school his trouble was related to them most pathetically and you may be sure the sympathies of the entire house were enlisted, but it is a well ordered home and no one saw a way out of the trouble.

The next day he appealed again to his mother to whip him and give him his ball, when she suggested that as she was not able to do it that his father might if he chose, but Amzi demurred at that; he said his father did whip so hard. However, after passing the entire day in melancholy lamentations he mustered courage to lay the matter before his father when he came in from his office. His father was satisfied that he was telling the whole truth and nothing but the truth, and detected also a lingering sense of injustice in his mind, although unexpressed, because the money really was his own—took him on his lap and explained the whole extent and bearing of the misdemeanor, after which he said, "Now, Azim, you understand that as long as your mother has to take care of you, she has also the care

of what belongs to you and she is the best judge of how and when you shall spend your money, but what she is now punishing you for is disobedience; if you still think you would rather have a whipping than be deprived of the ball, as your mother is willing it shall be so, I will whip you; but it must first be decided how much whipping you are to have." After thinking awhile Amzi said, "Give me nine, papa." "Do you mean nine slaps or nine separate whippings?" this way slapping his hands together three times.

"You may give me nine whippings 'cause I was real bad," said the little soldier. But his father, loth to take any advantage, explained that that would be twenty-seven slaps a good deal for a little boy. "Never mind, papa, I can stand it if you'll give me the ball." "Well, Amzi, I'll stop any time you say, but you can't have the ball if you cry 'stop' before you have had them all, but if I think fit to stop I'll give you the ball." His mother with a view, doubtless, of sustaining the lad's courage, placed the ball in sight.

Amzi placed himself squarely across his father's knees, when three decided slaps were given. He raised himself and twisted from side to side, and then resuming the regulation position, three more slaps a little harder than the first, were given. He squirmed but did not rise, only said, "hurry up, papa, and give me the rest, I ain't crying yet." The next three given a little harder, caused him to jump up and around the room rubbing the injured parts, but back he went prepared for the rest, but his father could hold out no longer. He told him he was satisfied and gave him the ball. When he said "good-night," he added, "thank you, papa, for giving me the whipping and the ball." When his mother had him alone up stairs she asked why he did not thank his papa also for not giving him the rest of the whipping? "Because," said he, "I think papa ought to have given me the rest, I was a real bad boy, but never mind, I've got my ball,"—and you may be sure the ball went to bed with him. If in the distant future some may be moved to envy by his honorable distinction among his fellow men and seek to discredit this mark of early heroism, he may always be able to corroborate it by referring to records made by his Aunt Hannah.

—o—

TRY a wet towel at the back of the neck when sleepless.

HOME REMEDIES.

Mustard is a very valuable remedy. No family should be without it. Two or three teaspoonfuls of ground mustard stirred into half a pint of water acts as an emetic very promptly, and is milder and easier to take than salt and water. Equal parts of ground mustard and flour or meal, made into a paste with warm water, and spread on a thin piece of muslin, with another piece of muslin laid over it, forms the often indispensable "mustard plaster." It is almost a specific for colic, when applied for a few minutes over the "pit of the stomach." For all internal pains and congestions there is no remedy of such general utility. It acts as a counter-irritant, by drawing the blood to the surface, hence in severe cases of croup a small mustard plaster should be applied to the back of the child's neck. The same treatment will relieve almost any case of headache. A mustard plaster should be moved about over the spot to be acted upon, for if left too long in one place it is liable to blister. A mustard plaster acts as well when at considerable distance from the affected part. An excellent substitute for mustard plasters is what is known as "Mustard Leaves." They come a dozen in a box and are about four or five inches in size; they are perfectly dry and will keep for a long time. For use it is only necessary to dip one in a dish of water for a minute and then apply it.

THE DANGER OF WEARING RED.

A law has been passed within a very little time that in the villages of the Tyrol no lady shall be allowed to carry a red parasol. The cattle that graze along the mountains are so frightened at the color that ever so many accidents have happened there. I am afraid that nothing would have induced me to carry one even had I been allowed. I know how cows hate red. Most animals are affected by it. If you should tie, for instance, a piece of red flannel around the legs of a setting hen she would be too distracted to ever go back to her nest. And as for turkey gobblers,—have you ever dreamed that, with all their self-conscious pomposity, and all their proud and awkward strut, they could be the most undignified and ill-natured creatures in the world when red was about? A little girl in red stockings could set all the poultry-yard astir, and the old gobbler

would be sure to make her life wretched. Such gobblings and scoldings, and then such attacks on her legs, poor child! I was glad when red stockings went out of fashion for children in the country.

WHAT SOME WIVES EXPECT.

That a man will come home eagerly night after night, after his business, and caress them, and whisper loving words, when the fire is sickly, the hearth unclean, the dinner delayed and badly cooked, the children neglected-looking and cross, and she herself grumbling and complaining, is what some women expect to find in matrimony. Well, she need not expect it; he won't come; he has more sense. He will very naturally leave her awaiting him and go where his surroundings will be more tempting, where he can get a good meal and read his paper in peace and quietness.

When a man knows a nice dinner is waiting for him, comfortable fireside, a smiling wife and bright, well cared for children, as a rule, with very few exceptions, he will come home with rapid feet and eagerness. Try it, ye women whose husbands are uncertain in their home coming; it is quite worth your while; it requires some thought, self-denial and much effort, but it will repay in so many ways—an easy conscience, a happy home, a contented husband, healthy children and an approving mind.

Some women expect a man to give them all the money they ask for to spend as foolishly and recklessly as they like; he is simply a money-making machine, existent for their convenience; his life must be a hard-working one, while hers is to be full of ease and amusement. The worst of it is, these sort of women generally get the best men, and are much envied by their more unlucky sisters.—*Dublin Times.*

A LITTLE parsley, or a few grains of roasted coffee, or even a swallow or two of milk, if taken after eating raw onions, will remove the unpleasant odor.

A vinegar vat has been constructed in Tuckerton, Pa., which will hold 1,000 barrels.

Of the immigrants to this country, Germany sends more than twice as many as Ireland.

HAVE A SHELF OVER THE KITCHEN TABLE.

A Western correspondent sends us a description of a shelf placed over a table in the kitchen. It is a very simple affair, but any one who has a kitchen too small for a second table, will find it very convenient. The shelf is made of pine, and fastened to the wall by two hinges at the back. It is supported by two wooden arms, so hinged to the wall, that they fold back against the wall to the right. The shelf is placed about two feet above the table. It is more convenient to have it extend beyond the table at one end, and not come to the edge at the other. The kitchen table frequently gets overcrowded with cakes, pies, etc., on baking days, or the table must be partly cleared for other uses before the baking is finished, and at such times, a shelf of the kind described will be almost indispensable to any one who has once enjoyed its use. A kitchen table is often enlarged by adding a leaf, but a shelf will be found more economical of room.

OILING FLOORS.

For a single medium size room. One pound of burnt umber ground in oil. Mix this with boiled linseed oil a sufficient amount to color properly without perceptibly thickening the oil. Rub this into the wood thoroughly with a paint brush. Apply this twice, letting the first get perfectly dry before adding the second. When the staining is done wax it with a mixture of turpentine and yellow bees-wax in the proportion of one gallon of turpentine to one pound of wax shaved thin. Let the wax soak all night or longer in the turpentine before using, then rub it in with a woollen cloth. It may be necessary to use the wax several times.

INITIALS on house linen are much darned over before being worked to raise the letter.

A tunnel which will cost \$750,000 is to be constructed through Carbonate Hill, at Leadville.

RECENT calculations show that the sun's light is 600,000 times that of the full moon.

BOLIVIA has recently been admitted to the Universal Postal Union.

A TREMENDOUS sulphur spring has been tapped near San Antonio, Tex.

Miscellaneous.

HOING AND PRAYING.

Said Farmer Jones, in a whining tone,
To his good old neighbor Gray,
"I've worn my knees nigh through to the bone,
But it ain't no use to pray.

"Your corn looks just twice as nice as mine,
Though you don't pretend to be
A shinin' light in the church to shine,
An' tell salvation's free.

"I've prayed to the Lord a thousand times
For to make that 'ere corn grow;
An' why youn beats it so, an' climbs,
I'd gin a deal to know."

Said Farmer Gray to his neighbor Jones,
In his easy, quiet way;
"When prayers get mixed with lazy bones,
They don't make farmin' pay.

"Your weeds, I notice, are good an' tall
In spite of all your prayers;
You may pray for corn till the heavens fall,
If you don't dig up the tares.

"I mix my prayers with a little toil,
Along in every row;
An' I work this mixture into the soil
Quite vig'rous with a hoe.

"An' I've discovered, though still in sin,
As sure as you are born,
This kind of compost well worked in
Makes pretty decent corn.

"So while I'm praying I use my hoe,
An' do my level best
To keep down the weeds along each row,
An' the Lord, he does the rest.

"It's well for to pray both night and morn,
As every farmer knows;
But the place to pray for thrifty corn
Is right between the rows.

"An' so I believe, my good old friend,
If you mean to win the day,
From ploughing clean to the harvest's end,
You must hoe as well as pray."

SALT.

The common salt is a compound of the two elements sodium and chlorine. Its origin is not known, except so far that the chlorine becomes combined with the oxide of sodium, which, known as soda, is a part of several rocks which are abundantly distributed, and that the salt thus formed became dissolved in the water which at one time surrounded the body of the earth as the universal ocean. In course of time, in the many geological changes of the earth's surface, bodies of water were left high and dry, so to speak, on the land, and the water evaporating left the salt in vast beds, which in time were buried by beds of rock formed by sand or mud which filled the shallow lakes. Thus the ocean was always salt and the beds of salt which afford the supply for the use of mankind originally

come from the ocean in the manner mentioned. Indeed, we may see the very same thing going on at the present time in places where salt lakes and lagoons are drying up.—*N. Y. Times.*

SOME RICH MEN'S FORTUNES.

A Wall street broker of long experience and marked financial success, happened to be in a communicative mood a few days ago and chatted entertainingly about the millionaires whom he had met. For several years he was closely associated with Jay Gould, and he surprised his friends by his estimates of Jay Gould's wealth. One gentleman asked: "Is it true that Mr. Gould is worth between \$100,000,000 and \$150,000,000?"

"No, he is not worth any such amount," was the reply. "The fortunes of Wall street men are greatly exaggerated in most instances. I doubt if Mr. Gould could clear up his obligations and get out of the street with much over \$50,000,000. I believe that Mr. Sage is a richer man than Mr. Gould. It is not unlikely that Mr. Sage is worth \$70,000,000. Mr. Cornelius Vanderbilt is probably worth between \$125,000,000 and \$150,000,000, and Mr. John D. Rockefeller must be worth about as much. Mr. Rockefeller's interests are so widespread and so profitable that nobody except himself really knows how rich he is."—*N. Y. Times.*

PHOSPHORUS is now being made by electricity. The principal manufactory is in England, where it is anticipated fully 1,000 tons will be made annually.

WHIPPING in the school should be abolished everywhere. The teacher that cannot get along without whipping children should be yoked to the man who cannot get along without clubbing his horses and kicking his cows.

Frankness and bluntness are not the same. As disagreeable a nuisance as there is in the world is the bluff individual who "always says just what he thinks."

One of the coolest exhibitions of gall is the advocacy of the dignity of labor by some fellow who never did a stroke of work in his life and could not be hired to do a stroke.

To dream of a dog shows that your friends are faithful.

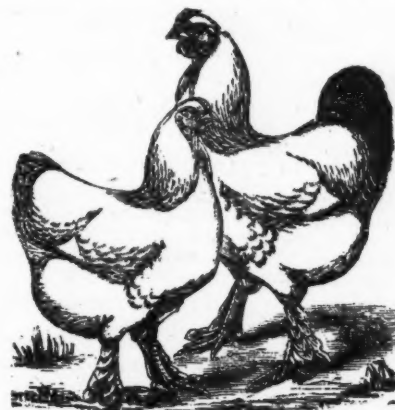
A bag of hot sand held to the afflicted part relieves neuralgia.

JAPAN is trying to secure closer reciprocity in trade with China.

Texas is to have an exhibit costing \$3000,000 at the World's Fair.

Many progressive farmers now harvest corn with the new corn harvesters worked by horse power.

ADVERTISEMENTS.



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I have for the Fall of 1891, an especially fine lot of FRUIT TREES, especially APPLES—Southern Winter Apples for Southern Planters; GRAPE VINES, Small Fruits, also a large collection of the best EVERGREEN TREES—Dwarf Arbor-Vitæ and Irish Juniper, Plants for Hedges and Screens. SHADE TREES for Street or Lawn. Roses and Greenhouse Plants, etc.

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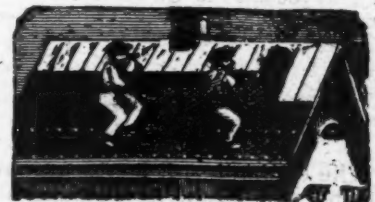
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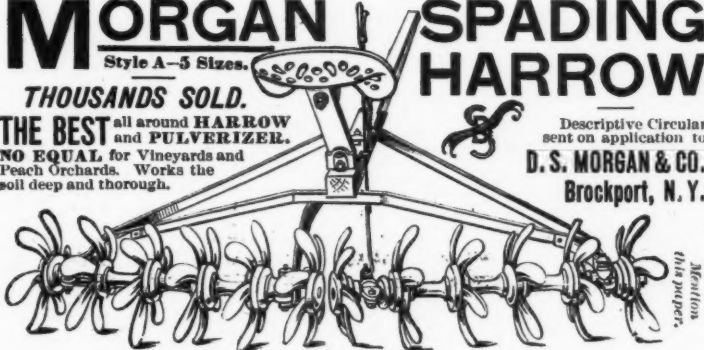
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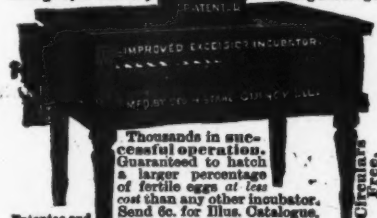
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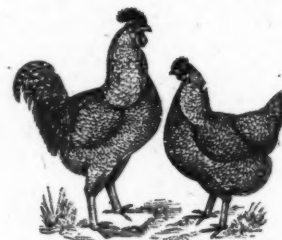
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